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THESIS

COST/BENEFIT ANALYSIS OF COMMANDER, NAVAL SURFACE FORCE, U.S. PACIFIC FLEET'S SUPPLY MAINTENANCE TRAINING TEAM

by

Carlos D. Buzon, II
and
Michael D. Huggins

December 1991

Thesis Advisor: Paul M. Carrick

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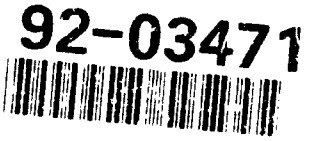

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This thesis is an attempt to accomplish a cost/benefit analysis of Commander, Naval Surface Force, U.S. Pacific Fleet's (COMNAVSURFPAC) Supply Maintenance Training Team (SMTT). The effectiveness of the SMTT program is also evaluated.

Data were gathered from surveys of current and former Supply Officers of COMNAVSURFPAC ships, with the Shipboard Non-Tactical Automated Data Processing II system installed and which had received all or part of an SMTT assistance visit. Interviews were conducted with selected Navy and civilian contractor members of the SMTT staff. Data were also gathered from various records and reports maintained by the SMTT staff and by COMNAVSURFPAC's Supply Assistance Center.

The nature of the cost and benefit data of the SMTT program did not lend itself to a homogenous comparison of costs to benefits. The authors have determined that an attempt to "homogenize" the data with the use of economic "shadow prices" was of little value in meeting the "measurable performance" criteria of the cost/benefit analysis. Therefore, in strict terms, a cost/effectiveness analysis was accomplished.

The analysis indicated that the SMTT program has resulted in positive gains in afloat supply operations. Many intangible benefits are derived from the assistance visits and there are indications of tangible benefits in the form of dollar and manhour savings. The trend of the data shows a valuable program to the fleet. Although not definitive due to data limitations, the analysis indicates a high probability that the benefits

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Cost/Benefit Analysis of Commander, Naval Surface Force, U.S. Pacific Fleet's, Supply Maintenance Training Team

by

Carlos D. Buzon, II . 1981
Lieutenant, Supply Corps, United States Navy
B.S., Chapman College

and

Michael D. Huggins
Lieutenant , Civil Engineer Corps, United States Navy
B.S., United States Naval Academy , 1985

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December 1991

Authors: _____
Carlos D. Buzon, II

_____
Michael D. Huggins

Approved by: _____
Professor Paul M. Carrick, Thesis Advisor

_____
Lieutenant Commander Kenneth W. Steiner, Second Reader

_____
David R. Whipple, Chairman
Department of Administrative Science

ABSTRACT

This thesis is an attempt to accomplish a cost/benefit analysis of Commander, Naval Surface Force, U.S. Pacific Fleet's (COMNAVSURFPAC) Supply Maintenance Training Team (SMTT). The effectiveness of the SMTT program is also evaluated.

Data were gathered from surveys of current and former Supply Officers of COMNAVSURFPAC ships, with the Shipboard Non-Tactical Automated Data Processing II system installed and which had received all or part of an SMTT assistance visit. Interviews were conducted with selected Navy and civilian contractor members of the SMTT staff. Data were also gathered from various records and reports maintained by the SMTT staff and by COMNAVSURFPAC's Supply Assistance Center.

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The analysis indicated that the SMTT program has resulted in positive gains in afloat supply operations. Many intangible benefits are derived from the assistance visits and there are indications of tangible benefits in the form of dollar and manhour savings. The trend of the data shows a valuable program to the fleet. Although not definitive due to data limitations, the analysis indicates a high probability that the benefits of operations of the different SMTT components exceed the costs in varying degrees.

TABLE OF CONTENTS

I. INTRODUCTION

The focus of this thesis is to provide an analysis of the effectiveness of Commander, Naval Surface Force, United States Pacific Fleet's (COMNAVSURFPAC's) Supply Maintenance Training Team (SMTT). An attempt at a cost/benefit analysis is performed to provide a basis for decisions in identifying programs that maximize COMNAVSURFPAC's attainment of its objectives and to distinguish those from the ones that increase cost with little or no return on investment. SMTT is one of the programs being reviewed.

COMNAVSURFPAC Code N7, the Assistant Chief of Staff (ACOS) for Supply Operations, Financial Management and Automated Data Processing (ADP) was conducting a strategic review of supply support and assistance provided the Naval Surface Force, Pacific (NAVSURFPAC) during the data gathering phase of this thesis. The staff has been assessing N7's operation in conjunction with a likely strategic retrenching that is anticipated as a result of the projected drawdown of the fleet in the first half of the 1990's. It is expected that this drawdown will result in a significantly reduced COMNAVSURFPAC operating budget. The strategic planning process was influenced by the total quality leadership (TQL) that the Chief of Naval Operations (CNO) has endorsed for Navy-wide implementation.[Ref. 1] When CDR Garban reported for duty as Code N714, in charge of Supply Maintenance Training Team, Supply Management Assessment, and Maintenance and Material Management (3-M), he

advocated full strategic planning. CDR Garban reported from Washington, DC, where he was heavily involved in improving management and productivity of Navy industrial facilities. He dealt with hundreds of management consultants who proved to be successful in significantly improving Navy industrial facilities' performance.

The situation presented itself as an excellent opportunity to apply the thesis method in studying and assessing one of the programs under review. SMTT was selected because it is a relatively new program. It was started in 1987 and took its present form in 1989.

SMTT is a result of the Admiral Taylor Blue Ribbon Panel Report that looked at all aspects of operation, administration and management of supply support on board COMNAVSURFPAC ships. This panel was formed by Admiral Taylor as a result of a 1987 COMNAVSURFPAC tasking letter.[Ref. 2]

SMTT is designed to enhance the supply/maintenance interface, shipboard equipment configuration management, and logistics support. In addition SMTT provides training in the automated Food Service Management (FSM) and Retail Operations Management (ROM) systems to enhance shipboard quality of life and crew support. It is notable that other type commanders such as Commander, Naval Surface Force, U.S. Atlantic Fleet (COMNAVSURFLANT) do not have such assistance organizations.

A. THE EVALUATION PROCESS

In attempting to evaluate the effectiveness of SMTT the first step is to identify its mission. The thesis also seeks to establish if the mission is supportive of

COMNAVSURFPAC's objectives, and how this mission was developed. Further the recommendations of the Blue Ribbon Panel Report and how they were arrived at were also reviewed to determine if SMTT is satisfying those recommendations. These were accomplished by reviewing relevant documents and related literature, and through interviews of COMNAVSURFPAC personnel, including SMTT key players.

A cost/benefit analysis is essential in evaluating the effectiveness of SMTT. Relevant costs and benefits attributable to the program will have to be determined.

The cost of SMTT was determined from review of budget documents, contracts providing civilian personnel to support SMTT, and the cost of military personnel assigned to SMTT. The cost to the ship of getting SMTT on board will also be examined. Costs for facilities and other expenses that were identifiable to SMTT but would have been spent with or without SMTT were considered sunk costs and not part of the cost/benefit analysis.

Benefits perceived to be provided by SMTT were determined from two perspectives: that of COMNAVSURFPAC headquarters through various interviews and document reviews; and from the perspective of the supported activities, the operating forces, through a fleet survey of 118 ships under COMNAVSURFPAC. The thesis authors feel that the supported activities may assign values to SMTT that are different from the values that COMNAVSURFPAC headquarters personnel assign to the program. After all, each has its own internal interests and points of view, coming from different perspectives. For instance, SMTT staff members, if asked to assign values to the benefits of their program will probably err towards a higher estimate.

Certain other segments of the Navy, such as operational groups and squadrons under whose commands NAVSURFPAC ships execute their operational missions, also place values on such benefits. However, these values will be difficult to capture, much less to quantify.

B. ORGANIZATION

This thesis is organized to give the reader an overview of COMNAVSURFPAC's SMTT, its internal and external environment, its objectives, and how it meets those objectives. Chapter I provides an introduction to the thesis and the thesis objective. Chapter II provides the background and other issues that lead to the formation and implementation of SMTT. Chapter III details the function of each SMTT component together with manning and other resource related issues. Besides providing the reader a detail of SMTT activities, the purpose of Chapter III is to give the reader a grasp of how SMTT incurs its cost of operation. Chapter IV presents the data which includes costs and the benefits of SMTT. Chapter IV also presents the survey that was used to augment the data gathering phase of the study. Chapter V provides the authors' cost/benefit and cost/effectiveness analysis of the data. Chapter VI presents the authors' conclusions and recommendations.

C. CONCLUSIONS AND RECOMMENDATIONS

The general conclusion of the thesis is that the mission of SMTT is congruent with the higher readiness objectives of COMNAVSURFPAC with regards to its supported afloat activities. An evaluation of this congruency, possible exceptions and areas that

may require follow on study is provided throughout the thesis, starting with the background information up to the recommendations provided in the end.

Information gathered through review of literature, documents, surveys, and interviews point to the direction of positive impact of SMTT to readiness attainment of COMNAVSURFPAC.

The major recommendation derived from the thesis is that the program should be expanded, and that SMTT achievements should be identified, documented, and made available to other type commanders in a coordinated effort to improve total resource utilization elsewhere in the Navy.

II. BACKGROUND

A. THE BLUE RIBBON PANEL

For several years, COMNAVSURFPAC's Supply Management Inspection (SMI) teams were consistently reporting significant afloat supply management problems. Additionally, these and other deficiencies had been noted over years of operations relative to the control and use of shipboard stocks of material, appropriated funds, equipment support and other supply management items critical to the Navy's combat sustainability.[Ref. 3] In early 1987, several large-scale unauthorized supply support activities and associated investigations (i.e., the transfer of F-14 aircraft spare parts to a non-allied country, the $600 ashtrays, and other supply accountability problems on board ships and supporting stations) were creating major concerns among Navy's leadership. As a result, on 12 March 1987, VADM G. W. Davis, Commander, Naval Surface Force, U.S. Pacific Fleet tasked RADM R. A. K. Taylor, Commander, Cruiser-Destroyer Group ONE (COMCRUDESGRU ONE) to examine all the aspects of the current state of affairs of Supply Management on COMNAVSURFPAC ships.

A blue ribbon panel was established and charged with conducting the examination and making recommendations to overcome the causes of supply management problems.[Ref. 4]

1. Overall Findings

The most significant overall finding from a subjective point of view as expressed by the panel was the perception from all quarters (ship and outside agency, officer and enlisted, supply and line personnel) that the Navy supply system has too many errors, is not responsive and is too complex to ever be responsive. This perception curbs initiative and prevents effective logistics support. It stems directly from an inadequate understanding of the principles and the procedures of the Afloat Supply Support Program as delineated in Naval Supply Systems Command (NAVSUP) P-485, Afloat Supply Procedures [Ref. 5]. When they do not know the procedures, and when the procedures are difficult to learn, personnel work around and avoid promulgated programs. Sailors' (storekeepers and maintenance men) complaints of the difficulty of understanding the SNAP II[1] process are another manifestation of this perception. The other major findings of the panel were:

1. Serious and widespread mismanagement problems did exist concerning matters of routine supply operations aboard surface ships. SMI reports consistently showed that 15-25 discrepancies were being discovered as repeats from previous inspections; 60-70% of ships had internal problems in requisition validity (material obligation validation (MOV)); 75% of ships were not attaining Supply Effectiveness goals (too many situations when the required part is not carried

[1]SNAP II is the Shipboard Non-tactical Automated Data Processing System installed on board most small to medium combatants (destroyers, frigates, cruisers, amphibious ships). It provides automated integration of administrative, supply/financial management and maintenance functions. The SNAP II also provides a baseline capability, both in software and hardware, that can be expanded sufficiently under subsequent, separately identifiable programs, to satisfy foreseeable requirements in Navy non-tactical data processing. It is intended to greatly improve timeliness and accuracy of available data and reported information.

(NC) or is not in stock (NIS) on board the ships); over 70% of ships were not meeting processing goals for turning in carcasses for repairable items; and 70% of ships had fixed allowance stock record battery maintenance and item replenishment problems. 90% of ships did not follow the prescribed procedures in managing Ready Service Spares (RSS)[2] and Maintenance Assistance Modules (MAM)[3]. Additionally, configuration control programs were very weak, and most of the ships were not making routine changes to their consolidated shipboard allowance list (COSAL)[4].

2. Problems were costly in terms of dollars, manhours, and self-confidence. These supply/maintenance related problems were very costly in terms of dollars, lost manhours and shipboard levels of self-confidence. More importantly, there was a large direct cost in terms of combat readiness.

3. These challenges were not being effectively highlighted or addressed by the then current SMI and SMI follow-up process.

4. With regards to these challenges, current trends were declining, or at best, mixed. There was a need to be concerned with the future.

In his report, Admiral Taylor determined that there have been numerous efforts to correct the problems, including:

1. A series of inventory Accuracy Guidance Messages

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[2]Ready Service Spares (RSS) are Supply Department owned spare parts stored in workcenters to allow for expeditious repair of critical equipment. Some are stored in other than Supply Department shipboard spaces for ease of storage due to their sizes, or maintenance requirements.

[3]Maintenance Assist Modules (MAM's) are parts that are usually stored in maintenance workcenters for use by maintenance personnel in troubleshooting shipboard equipment. MAM's are not spare parts used to fix downed equipment, but are there for troubleshooting purposes only.

[4]COSAL is a maintenance, technical and supply document. It is the authoritative document which lists: (1) Equipment and components installed in a ship, (i.e., the configuration), (2) The repair parts and special tools required for the operation, overhaul, and repair of equipment and components, and (3) The operating space items necessary for the safety and upkeep of the ship itself.

2. Funded third party wall-to-wall inventory of stock to reconcile records were scheduled

3. A new repairable spare parts reconciliation program

4. Start-of-year Financial Management Guidance message [Ref. 6]

5. Surface Warfare Officer School Command and Integrated Supply/Maintenance School offered by Fleet Training Center were attempting to contribute to the desire to solve supply/maintenance problems

The panel concluded that more has been done in 1985 - 1987 to address supply/maintenance programs at the level of surface ships than in the previous decade. However, the panel pointed out two issues that were apparent. First, the effort has not been enough. It has been piecemeal and has not covered the full range of programs described in the Afloat Supply Procedure Manual (NAVSUP P-485). It has been addressed in numerous naval messages and the benefits have been perishable. Second, the efforts have not matched the growing problems: Storekeeper (SK)[5] manning afloat has decreased to its lowest level; training opportunities for SK's have decreased due to cancellations (probably in error) of scheduled courses; the demand for COSAL and configuration documentation maintenance has been increasing due to an ever-increasing number of equipment alterations; and the full implementation of the SNAP II system with significant procedural changes in processing routine records has generated many new problems, made even more complicated by the complex SNAP II system.[Ref. 7]

[5]SK's are the Navy's supply clerks. They see that needed supplies are available--everything from clothing and machine parts, to forms and food.

Further adding to the complication is the Department of Defense Acquisition Systems's drive towards product improvement (PI), planned product improvement (PPI), and pre-planned product improvement (P^3I) programs.[Ref. 8] All of these programs contribute to the already cumbersome task of managing and keeping track of shipboard equipment configuration.[6]

These all added up to have an effect that has exceeded the corrective efforts up to that point. This would not have been the case if personnel, both line and supply, officer and enlisted, possessed higher "levels of knowledge," that is, if the established principles of the overall Naval Supply Systems Command supply support program were better understood.

The panel established that there exists a need for a new effort to ensure that line personnel come to understand procedures and their responsibilities in these logistic support arenas that do affect combat readiness. They determined that there is a need for a training program that will bridge the gap that is preventing an effective interface of supply and maintenance procedures. However, this training program should be tailored to the needs of NAVSURFPAC and directly address the identified deficiencies.

[6]For this thesis, shipboard equipment configuration is knowing what weapons systems are on board a ship and carrying the corresponding spare parts, technical manuals and properly trained technicians required to support these systems.

2. Different Areas of Panel Research

Admiral Taylor's Blue Ribbon Panel worked as a single team during various sessions and was also divided into three research groups, each with its own set of topics to analyze. The three research groups formed to investigate the following areas:

1. The Supply Management Inspection (SMI) process
2. Configuration control including COSAL, maintenance, and validity
3. Training, manning and SNAP II procedures with respect to supply programs, configuration management, and COSAL maintenance

The research groups conducted surveys aboard twenty surface ships and visited shore sites that have direct impact on shipboard supply support and/or equipment configuration. Each research group submitted their own findings and recommendations.

3. Training

This thesis will highlight the portion of the report that addressed training, one of the areas investigated by the panel.

a. Overall Training

In relating the results of supply management inspections to training, the panel determined that personnel wanted to do the right thing, but did not understand the programs, their responsibilities or how they could contribute. There was no doubt among the panel members that the number one priority action required to address supply problems was to upgrade training.

The panel determined that enlisted supply personnel in the Storekeeper rating have the poorest level of knowledge and need the most assistance in terms of improved training. Supply Officer and especially line officer training is also inadequate, but training courses do exist that could and must be upgraded.

b. Storekeeper Training

In 1986, Service School Command (SSC), San Diego provided four SK C-schools[7] as follows:

1. Independent Duty/Shipboard SK
2. SK Inventory Management
3. SK Financial Management
4. SK Technical Publications

The first course listed is essentially a summation of the following three courses. The panel determined that this course has been totally mismanaged. By course description, it would have been ideal for shipboard SK's. The Catalogue of Navy Training Courses shows that it covers a wide range of SK functions and that it heavily references the NAVSUP P-485 document. Quotas are controlled by the Bureau of Personnel (BUPERS). Course utilization at the time was about 60 percent (60 percent of available training seats were used). One problem was that one half of the students that do attend are enroute to shore duty instead of to sea duty as intended. The instructor

[7]Navy "C" Schools provide advanced knowledge, skills, and techniques needed to perform a particular job.

staff is relatively idle. The course has become a reenlistment incentive instead of the vital tool needed to support shipboard supply operations. The course continues, but it does not support the fleet. The result is that afloat SK personnel assigned to COMNAVSURFPAC ships did not understand their jobs or the supply programs, and were not getting the right training at the right time. An analogous submarine course does train personnel enroute to sea duty, and that course is reportedly well subscribed and supported by BUPERS placement desks.

The three shorter courses were popular. Ships did send their personnel, and quotas were controlled by the Service School Command. Students attended on a Temporary Assigned Duty (TAD) basis. These courses were always full of students until about 1987, when all three courses were canceled. They were canceled because a new SNAP II based course was being planned, and it needed to go through a pilot test phase. The panel feels that these three short courses should not have been canceled. Pursuant to Chief of Naval Education and Training (CNET) policy, courses are not canceled until properly replaced.

The SNAP II based pilot course ran for four months and was not to be offered until September of 1987. Meanwhile, there was no comparable training available to shipboard SK's. The new course and the related information of its management plan were described in the Navy Training Plan of February, 1987. With other courses for surface ships canceled, the average students on board at the SK facilities of SSC (all courses included) will be about 40-50 students, a decrease from the 75-80 the preceding year. At that time, when new programs (new Integrated Logistic Overhaul (ILO), SNAP

II, Ship Configuration and Logistic Support Information System (SCILSIS), etc.) are being implemented on board ships, the scope of SK training programs was decreasing. In addition, the Senior Enlisted Refresher Training (SERT) course designed for Chief Petty Officer (E-7) level SK personnel enroute to sea duty was also canceled in 1986.

Elsewhere, the aviation support community started a recovery program sending at least every Second Class Petty Officer (E-5) and above SK to an SK C-school enroute to aircraft carrier duty, and they have planned to stay in front of the transition to computer based systems by providing training to all junior as well as senior SK personnel enroute to carrier duty. It was obvious that NAVSURFPAC ships needed the same assistance.

The panel has determined that training was the number one problem, and in that category, enlisted supply SK training is at the top of the list.

c. Line Enlisted Training

The Integrated Shipboard Maintenance Support (ISMS) course promoted understanding of COSAL [Ref. 9] and its relationship to maintenance, and was determined by the panel to be adequate. However, it was recommended that the course be broadened to include inventory control rules and management of ready service spares, maintenance assistance modules, and other operating space items (OSI) that are held at the work center level[Ref. 5].

This course was considered useful, however, attendance (including officers) has declined due to reluctance of shipboard line management to send their

personnel to shore schools. They justify this reluctance with the heavy workload of line personnel. Sending people to school takes away resources assigned to perform the workload. It is notable that there is a directive requiring a certain percentage of work center supervisor and repair parts petty officers to attend this course. However, there is no consequence for non-compliance. The panel recommended a review of this declining attendance of ISMS course.

d. Supply Officer Training

Consistent comments from Supply Officers indicate that a review of training provided on NAVSUP P-485, Afloat Supply Procedures, is required. Indications were that this material was covered too early in the Supply Officers' Basic Qualification Course offered at Naval Supply Corps School in Athens, Georgia. The topic is not reinforced and not covered in detail in later follow-on training. The Supply Officer Refresher Training (SORT) course for supply department heads was designed to respond specifically to SK-area shipboard supply problems. In 1987, the blue ribbon panel found that three out of ten department heads attended the SORT course. It was determined that there have been too many waivers and too many department heads who attended for less than the full length of the course. The panel believes that SORT must be a minimum requirement.

e. Line Officer Training

Surface Warfare Officer School Command (SWOSCOLCOM) started training on supply management of line workcenters and departments in 1985 for

Department Heads, Prospective Commanding Officer (PCO), and Prospective Executive Officer (PXO) courses. The lesson plans were considered excellent, and they were offered in quality training sessions. However, the total subject matter was not given enough time or emphasis, according to their findings. In addition, the line community, in general, has not considered themselves to have supply related responsibilities, that they are not Accountable Officers, and that these supply responsibilities cannot positively affect their department or ship's combat readiness. NAVSUP P-485, PARAGRAPH 1136-1d declares that Line Officers have supply related responsibilities, that they are Accountable Officers, and that their responsibilities affect readiness.

The blue ribbon panel recommended that Afloat Supply Procedures training should be provided up front at the Division Officer and Department Head Levels, with the goal of raising overall level of knowledge in this area. With increased knowledge, these officers will be able to support, appreciate, and provide guidance to their enlisted personnel.

f. Repair Parts Petty Officers

Each workcenter has enlisted line personnel assigned to manage the workcenter's supply needs, and liaise with the supply department. The workcenter's success in meeting its supply needs is directly impacted by the workcenter's supply petty

officer (or repair parts petty officer (RPPO[8])) and his efficient use of SNAP II. The panel found that only 20 percent of RPPO's had any formal supply related training.

The panel has determined that if the level of knowledge of officers and supervisors were elevated, the RPPO's would do much better. They would get support, appreciation and guidance. Someone with knowledge would review their records and their work.

B. ANOTHER PERSPECTIVE

Weapon systems are made up of the hardware, software, and people to operate and maintain them. Shipboard configuration is knowing what systems are on board a ship, and what spare parts are required to be carried in limited shipboard spaces to maintain those systems. Shipboard equipment configuration control is the key to effective logistics support for surface combat systems. Logistics support includes the fully integrated elements of maintenance, supply, technical documentation and personnel. SNAP II and the NAVSEA sponsored SCILSIS program are in place on the majority of Naval Surface Force, Pacific (NAVSURFPAC) afloat commands, however, their effectiveness in maintaining accurate equipment configuration has been limited due to numerous variables.[Ref. 10]

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[8]RPPO's are regular technicians who are assigned a collateral duty, responsible for requisitioning of parts for their workcenters. They usually operate, maintain, and repair equipment, in addition to their collateral duties. There would normally be a primary workcenter RPPO and an alternate. They are the liaison between their line workcenters and the ship's Supply Department. Ships' Supply Departments normally assist in training RPPO's about their functions, and would routinely hold RPPO training.

Through assessments and on-site visits, data was accumulated which indicated that the Maintenance Data System (MDS)[9] process on the majority of units fell short of achieving satisfactory equipment configuration control (with corresponding potential for logistics support disconnects) due to problems in three specific areas [Ref. 10]:

1. Data quality. Equipment file records in SNAP II contained significant apparent errors, seriously reducing its usefulness by shipboard personnel. For example: 40% of functional designators were blank; 33% of records (of repair parts) had no location assigned.

2. Training. Maintenance personnel (including management and supervisory levels) received little or no SNAP or logistic support training from the training establishment. Training that is available does not effectively address practical application of this discipline.

3. Lack of confidence. As a result of the negative impact of the two issues above and the general perception that the SCILSIS process (the record maintenance element of MDS) is so slow, there is a general lack of confidence in the system. This serves to remove the positive incentives which should accompany successful equipment configuration control (i.e., accurate maintenance and timely reporting ensures support is available).

A program was needed to address these three issues. A team was envisioned to provide the expertise to train and assist afloat supply and maintenance managers and operators. A typical one week visit will provide up to 200 man-days of training, accomplish significant file corrections, and gather information to allow follow-up action to be taken with the unit's Configuration Data Manager (CDM)[10]. Each class of ship

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[9]MDS is the documentation requirement of the Navy Material Maintenance Management (3-M) System and is supported by SNAP II.

[10]Each class of ship has its own Configuration Data Manager (CDM), normally the primary shipyard that was involved in the class' development and construction (i.e.,

has a CDM, usually the main contractor (i.e. Ingalls Shipbuilding) which maintains the configuration data base for each ship in its class. The team is supposed to develop the credibility which the system has not developed itself.

C. MANDATE AND FORMATION OF SUPPLY MAINTENANCE TRAINING TEAM (SMTT)

To deal with most if not all of its findings, one of the recommendations of the Blue Ribbon Panel was the establishment of a Storekeeper Training and Assistance Team to provide professional training on board NAVSURFPAC afloat units. COMNAVSURFPAC's Supply Maintenance Training Team was formed in 1987 with a mission to correct most of the immediate needs of the surface ships. The current organizational make up of SMTT has been in existence since 1989 after refinements and tailoring to the needs of the fleet as discovered during the restructured Supply Management Assessment[11] and other assistance visits.

D. BACKGROUND OF SMTT

COMNAVSURFPAC has recently consolidated most of its supply related assistance teams into one location in the midst of Naval Station, San Diego, California. This

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Ingalls Shipyard is the CDM for all Spruance class destroyers). CDM's keep track of all equipment and all equipment changes installed on board their ships.

[11]Supply Management Assessment is the restructured assessment organization of COMNAVSURFPAC used to evaluate fleet performance in the area of supply management. The restructuring was also based on the recommendation of the Blue Ribbon Panel.

collocated assistance group is now called Supply Assistance Center (SAC). The consolidation and relocation was done to get services nearer the bulk of the customer ships.

SAC is made up of Supply Management Assessment (SMA), 3-M, SMTT, and Navy Stock Fund Management assistance training teams. This thesis will attempt to isolate the costs, benefits and effectiveness of the SMTT portion of SAC.

1. Mission/Objective of SMTT

The mission/objective was identified through the review of relevant documents and related literature and interviews of COMNAVSURFPAC N7 leadership, including SMTT key players. After the mission was identified in broad terms, it has been redefined in this thesis in a more workable form useful in a cost/benefit analysis. The redefinition expresses the mission of SMTT *in* terms of mission parameters which the authors deduced from the documents, literature, and interviews.

The primary mission of SMTT is to assist NAVSURFPAC ships in attaining supply and Maintenance Data Systems standards of readiness by providing periodic shipboard training and corrective assistance as needed. To accomplish this primary mission, SMTT has a set of other mission/objectives in its agenda as follows:

1. To evaluate the administration of the different supply functions to include Supply Financial Management (SFM)[12], Maintenance Data Systems, Food

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[12]SFM functions of SNAP II allows users to order and monitor parts, manage inventory, perform financial budgeting and reporting. SFM resources include Logistics Application of Automatic Marking and Reading Symbols (LOGMARS) which introduces (continued...)

Service Management, and Retail Operations Management to identify deficiencies impacting operational readiness and maintainability.

2. To conduct this evaluation in a supportive team atmosphere and to prevent any adversarial impressions of a headquarter's visit. This is accomplished by ensuring that the intent of the visit is to train and support, rather than to inspect and report.

3. To provide on site training in the use of the automated systems available to support each system.

4. To provide shipboard assistance in troubleshooting SFM and MDS Subsystems of SNAP II and procedural problems that are beyond ship's force capabilities, and to provide recommendations for resolution of difficulties within ship's force capabilities.

5. To train the host activity in the procedures used to correct the problems.

6. To provide other training needs as identified and requested by the receiving ship and those needs deemed appropriate and recommended by the visiting SMTT.

2. Other Functions and Tasks of SMTT

Besides its mission/objectives, SMTT is tasked by various instructions and directives to do the following tasks and functions [Ref. 11]:

1. Based on SMTT Assistance Visits, and Force-wide implementation of Maintenance Data System procedures, prepare and distribute COMNAVSURFPAC tailored desk guides, procedures, and training documentation relative to SNAP II shipboard operations; and reviews SNAP II Supply Financial Management Subsystem and MDS policy and procedures and provides recommendations for improvements via chain-of-command to higher authority.

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[12](...continued)
automatic bar coding equipment and automated data entry techniques. Also included in the SFM resource is automated Mobile Logistic Support Force, which automates data processing system interfaces and supports the replenishment functions aboard many Navy ships.

2. Prepares and updates pertinent sections of COMNAVSURFPAC Force Supply Manual and COMNAVSURFPAC Ship and Craft Maintenance Manual with regards to SFM and MDS Subsystems of the shipboard SNAP II data processing system.

3. Responds to unscheduled SNAP II, FSM, and ROM shipboard assistance taskings received from higher authority.

4. Issues periodic guidance to NAVSURFPAC ships and shore activities to improve 3-M and MDS programs.

5. Provide guidance to ships and mobile activity personnel visiting SMTT headquarters with procedural questions and requests for information on an as-occurring basis.

Each individual component of SMTT has its own mission objectives supportive of SMTT. This latter set of objectives will be discussed with each component's activities later in the thesis.

3. Organization

SMTT is made up of five different assistance units. They are:

1. SNAP II SMTT, the largest unit offering a relatively standardized, supply assistance package in the area of Supply Financial Management, Maintenance Data System and the use of SNAP II automated system.

2. Fleet Assistance Correction Team (FACT) is a two man operation with each doing individually tailored visits to ships identified as having potential supply related problems. The team provides training assistance by working side by side with assisted ship's SK's, identifying problems, correcting them and holding training in the procedures applied.

3. Configuration and SNAP II Data Base Assistance Team provides assistance in configuration management and in SNAP II data base for ships that are about to enter overhaul or Integrated Logistics Overhaul procedures. In addition, this unit takes care of training in MDS which is the 3-M documentation portion of Supply Management SMTT.

4. ROM Assistance Team is a one man operation providing site visits and training assistance to ships requesting the service. The target ships are those with automated retail operations (ship's store and services). It also provides regularly scheduled classroom training for retail operations records-keepers of ships meeting prerequisites.

5. FSM Assistance Team is a one man team providing food service records-keeping training to those ships with automated food service records-keeping installed.

Figure 1 shows the organizational make up of SMTT in relation to its immediate administrative and operational environment.[13]

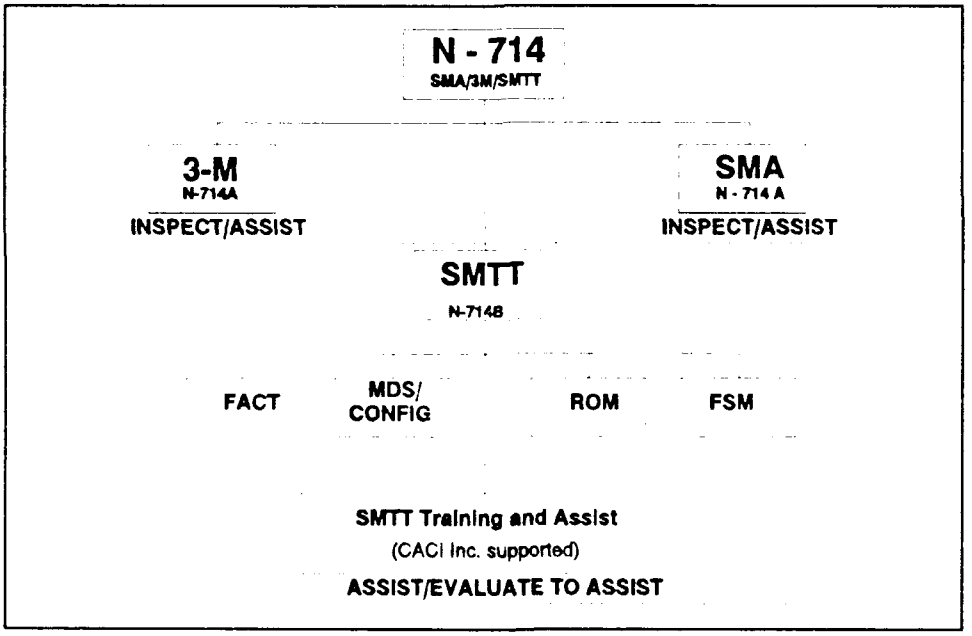

Figure 1. SMTT Organizational Chart

[13]Note that both 3-M and SMA conducts both assistance and inspection visits, whereas, SMTT only provides assistance visits. Also, CACI Inc. is a civilian contractor tasked to provide support for the SNAP II system. COMNAVSURFPAC has CACI personnel assisting the SMTT team.

E. ROLE OF TOTAL QUALITY MANAGEMENT/TOTAL QUALITY LEADERSHIP

Total Quality Management (TQM) is a management philosophy advocated by Deming involving the concepts of process improvement, employee participation, organized problem solving, and customer satisfaction. It has many definitions, however, the one the authors find most fitting is: "the application of quantitative methods and human resources to control and improve everything: products, services, and processes."[Ref. 12]

The CNO, in a memorandum to all flag officers, adapted Total Quality Management and redefined it for the Navy as Total Quality Leadership (TQL). This redefined approach was found by the CNO to be appropriate because of the unique role that Navy leadership plays in developing and implementing its operational objectives.[Ref. 13]

TQL is playing a key role in the strategic planning that is going on at COMNAVSURFPAC N7. Directed by the CNO, TQL is enjoying the highest level of support at all COMNAVSURFPAC units.

The SMTT Officer, LT Steve Smith, has been through TQL training. CDR Garban, LT Smith's immediate superior came from an activity that embraces TQL.[Ref. 14] He has been supporting Navy industrial facilities where the concept of TQM was spawned. Norfolk Naval Shipyard, the Navy's largest industrial facility, adapted TQM principles in 1987, and was designated by the Office of Management and Budget as the 1989 Quality Improvement Prototype.[Ref. 15]

The thesis authors have determined that the approach to problem solution at SMTT and its COMNAVSURFPAC environment is heavily influenced by TQM/TQL. Personnel were quoting lines from Admiral Kelso's memorandum and relate it to their thinking when dealing with SMTT initiatives. Some after effects, especially in determining cost of the program, will be discussed in later portions of the thesis.

F. FUTURE EXPECTATIONS

During the interview of key SMTT personnel, each one was asked about his personal feeling of where SMTT is going in light of the projected drawdown of the fleet, and the expected budget cuts that will go with it. Each person interviewed felt that if there is going to be any effect, there will be a need for an expanded SMTT to allow COMNAVSURFPAC units to operate more efficiently. Each one is confident of the positive contribution of SMTT and its indispensability to the fleet that they think SMTT will expand, or at least it will not be cut with the rest of the Navy.

III. SMTT PROCEDURES, MANNING AND SUPPORT

This chapter attempts to demonstrate all the activities of SMTT in accomplishing its mission. Each of the SMTT components is addressed separately with its own objectives, organization, and set of procedures and policies to give the reader a grasp of how SMTT incurs its cost of operation. A routine assistance visit (or training session) of the different components of SMTT is also discussed. This discussion is done to allow the thesis to present a comprehensive description of SMTT.

Most of the materials presented in this chapter were gathered through interviews of key SMTT personnel including CDR David Sona, who was COMNAVSURFPAC Code 714 (immediate superior of SMTT) until July 1991 [Ref. 16]. Materials for the SNAP II SMTT standard program training section were provided from interviews with LT Steve Smith, Senior Officer for SMTT [Ref. 7], Mr. Tom Wilson, Senior Analyst [Ref. 17], and Mr. Oscar Mascarinas, Junior Analyst [Ref. 18]. Materials from the Fleet Assistance Correction Team were provided by SKCS De la Cruz [Ref. 19]. The materials for MDS and Configuration Data Base Assistance Team were provided by MMCS Tyrell [Ref. 20]. Materials for the FSM and ROM sections were provided by Mr. Cris Arreola [Ref. 21] and Mr. Tom Tomas [Ref. 22] respectively. Both are Senior Analysts.

A. SHIPBOARD NON-TACTICAL AUTOMATED DATA PROCESSING (SNAP) II SMTT STANDARD PROGRAMMED TRAINING

SNAP II SMTT is the largest SMTT component offering a relatively standardized supply assistance package. Training offered is in the areas of Supply Financial Management, Maintenance Data Systems, and the use of the SNAP II automated system.

1. Objective of SNAP II SMTT

The main objective of SNAP II SMTT is to provide training in the use of the SNAP II system for supply and maintenance personnel. In the process, it also provides the link necessary for a better supply and maintenance interface on board ships. This is essential if SNAP II is to be utilized efficiently and supply/maintenance effectiveness is to be maximized.

Navy Maintenance and Supply Systems Office (NAVMASSO), Pacific is responsible for the installation and implementation of SNAP II systems on board ships. After installation, NAVMASSO provides the initial training for the operators, mainly storekeepers and selected maintenance technicians. NAVMASSO also provides, up to a point, interim support to allow the receiving ship time to adjust and learn the system. An initial installation is normally followed by a few days of on-site training that may include a shiprider program,[14] if necessary. To date, there are well over 100 NAVSURFPAC ships with SNAP II installed.

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[14]Shiprider programs entail personnel from the providing activity (NAVMASSO in this instance) to ride the ship and work side by side with operating technicians to provide them training in the use of the system for a predetermined period of time.

After the requisite number of personnel has been trained by NAVMASSO, the ship takes over the responsibility of providing follow-on training to their personnel, to include newly reported personnel. Most of these new personnel are trained on the job by technicians who have received previous training. Problems can arise if trainers develop wrong concepts or procedures which could be passed along. According to Mr. Tom Wilson, there is no SNAP II training pipeline for personnel on their way to ships. Limited SNAP II training is provided to those Storekeepers who are sent to ships via a "C" school. There is no formal training available for maintenance personnel. SMTT is attempting to fill this void.

2. Routine Assistance Visit

This section discusses a routine assistance visit conducted by the Supply/Maintenance Management SMTT which we will interchangeably call SNAP II SMTT . Strictly speaking, there are no "routine" assistance visits because each visit is unique, depending on the needs of the requiring ship. However, every assistance visit is delivered with a basic standard package of training, tailored to the specific needs of the ship.

a. Team Composition

Each team is normally made up of a military Team Leader, a Supply Financial Management Analyst, and one or two Maintenance Data Systems Analysts who are normally civilian contractors. Each one is highly qualified in his particular function. Most are cross-trained in the other subspecialties. The team leader is normally a Supply

Corps Officer (i.e., LT Smith) who already has had a Supply Department Head tour on a surface ship. Military members of the team are normally experienced Chief Petty Officers or above. All contractor team members of SMTT are currently retired Master Chief Petty Officers who made rank in their respective specialty.

b. Pre-Visit Procedure

Assistance visits are normally initiated by a visit request. Most visit requests are originated by ships. A very small minority is initiated by an outside agency such as the Supply Management Assessment (SMA) Team as a result of an inspection.

If for any reason (i.e., a ship has identified a problem, or wants to take advantage of refresher training in supply-maintenance interface, or needs to prepare for an impending SMA) it would normally request an SMTT assistance visit by message. A request for a visit can be communicated in any manner such as by telephone, personal request, or by letters.

To encourage more ship-initiated visits, SMTT tries to make it easy for ships to make a request. According to SMTT personnel, ship-requested assistance visits foster a team-support atmosphere instead of an adversarial atmosphere, usually fostered by a visit directed by an outside agency (i.e., SMA Team, COMNAVSURFPAC Force Supply, etc.), or by inspections. They emphasize that assistance visits are exactly what they say they are -- assistance, and not inspection. They support this policy by ensuring that reports generated by the visits are provided only to the ship's Commanding Officer and those people whom the CO wanted debriefed. Nobody is "put on report" outside the confines of the ship.

SMTT acknowledges ships' requests that are received by scheduling a visit, and by asking the ship to prepare for the visit. This preparation includes arranging a classroom type facility (normally the ship's mess decks) for some aspects of the training. SMTT also asks the ship to generate selected SNAP II management reports for analysis upon their arrival. SMTT will also request access to the ship's supply and maintenance records and files. The ship's Supply Officer (SUPPO) is normally the point of contact between the ship and SMTT. The SUPPO coordinates the activities of the 3-M coordinator and the major departments in the ship's pre-SMTT preparation.

On the average, visits are conducted about two months after the initial request. Depending on the SMTT schedule, it may happen with only two weeks of lead time. Emergency requests are entertained on a case by case basis. These could be due to problems that can affect a ship's deployment to the Western Pacific, or when the problem can result in loss of accountability. Emergency assists are more tailored to the urgency of the emergent problem and may be far from being a standard visit.

c. A Standard Visit

A standard SNAP II SMTT visit takes one work week to complete. The team would normally arrive on Monday for an in-brief in the morning, and depart the following Friday after a debrief.

(1) The Opening Brief. Normally, the CO, XO, and SUPPO would be in the opening briefs. SMTT encourages the participation of all the other major

department heads,[15] and if possible, all workcenter supervisors. It is really up to the CO to determine who will be at the in-brief.

(2) Training. Immediately after the opening brief, all the ship's Repair Parts Petty Officers are gathered for some general training. They get some classroom and hands-on training in Supply Financial Management functions of the SNAP II system, and more in Maintenance Data System functions of SNAP II. MDS is the documentation requirement of the 3-M system, and is supported by the SNAP II system. This training, which starts in a classroom setting, proceeds into the workcenters and normally lasts for one and a half days.

On the third day of the visit, all workcenter supervisors are gathered in the classroom and given packaged training tailored for workcenter supervisors. This lasts for a day and a half. After the workcenter supervisors, all the chiefs (E-7 and above) and officers are given a half day of training, again in a classroom setting. All workcenter supervisors and chiefs and officers are given Maintenance Data Systems training in SNAP II.

An improvised classroom is usually set up on the mess deck. It is provided with a projection screen and a computer hookup to the ship's SNAP II system to allow SNAP II training, with SNAP II monitor display projected on the screen. Each set of audience has a packaged training session tailored to their level.

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[15]The major departments on board small to medium combatants (frigates, destroyers, cruisers, etc.) are engineering, operations, and combat systems departments. Some ships call the latter, the "weapons" department.

While all the RPPO and MDS training sessions are going on, the SMTT Supply Financial Management Analyst is training the ship's senior SK's (Leading SK and supervisors), while other available SK's observe the training as time and space permits. Ships can have from less than four to over 15 SK's depending on ship type. The SK's are trained in their own spaces (i.e., Supply Support Center) using their own SNAP II terminals, with live supply data.

As much as possible, training is held on a not-to-interfere basis, especially for the SK's. This allows them to offer routine supply services to their regular customers while the assistance visit is going on. This setting provides the opportunity for the SMTT staff to observe how SK's are actually performing their job using SNAP II, and how RPPO's (representing their workcenter) process their own requirements. The SMTT staff interviewed indicates that such a setting facilitates more effective training because real world problems are encountered and corrected on-the-spot, giving a more lasting impression.

SMTT indicates that they average around 140 man-days of training per visit.

d. Post-Visit Procedure

(1) Debrief. Normally, the SMTT SFM Analyst debriefs the SUPPO and the Leading SK in the area of supply and financial management. The MDS analyst will debrief the 3-M coordinator.

An overall debrief or out-brief is provided by the SMTT leader to the ship's Commanding Officer and Executive Officer and whoever the CO wants debriefed on the morning of the fifth day of the visit. Usually, the audience for such out-briefs will be the same as the in-brief. It is normally up to the CO, upon the SUPPO's recommendation, who gets the brief. While the team leader is conducting the out-brief, the rest of the training team will be all over the ship, observing, making themselves available to the crew for questions, and more training if necessary. They do this until the end of the work day.

The out-brief provides a summary of where the ship stands in terms of level of knowledge, what problems were encountered, the corrective measures taken, the amount of training provided, the areas that were given emphasis, and recommendations for follow-up actions. A summary is also provided listing who received what type of training.

(2) Reports. Written reports are usually provided for the benefit of the ship receiving assistance, for the ship's Supply Officer's records and to inform the Commanding Officer of his ship's performance. Trip reports are prepared to summarize the assistance visit's completed mission and are filed with SMTT records. As mentioned earlier, no other activities get a copy of these reports.

It is notable that being a part of N714, the SMA team may have access to these records. However, they do not make it a regular practice of reviewing SMTT records prior to or after any assessments that they conduct.

(3) Follow-ups. Normally, no official follow-ups are conducted by the SNAP II SMTT staff after an assistance visit. The ship is responsible for implementing follow-on training and in implementing SMTT recommendations. However, if the ship requests any more assistance visits, SMTT reviews previous visits conducted, especially if they were within a year of a requested visit. They discourage assistance visits more often than every six months. This is to make sure that SMTT availability to other ships is not diminished, and also to allow requesting ships the time to implement recommendations of prior visits.

B. FLEET ASSISTANCE CORRECTION TEAM (FACT)

1. Objective

FACT is the newest unit of SMTT, started in March 1991. It was implemented to provide assistance to ships experiencing supply problems requiring deep involvement of a skilled supply management trouble-shooter, but not the wide range of standard training provided by the SNAP II SMTT. Problems do not have to be SNAP II related, however, most of those reported had something to do with SNAP II application in the SFM and MDS functions. The FACT analyst would work side by side with SK's reviewing records, and in the process, discover problems, or determine how problems already identified can arise. His responsibility is to show the SK's the best solution for the problem and watch them do the corrections themselves.

As summarized by SKCS De la Cruz, FACT will point out problems or potential problems of a supply operation just like they do it in inspections. The

difference is that FACT will find the best solution for the problem and train the SK's in resolving the problem, as opposed to inspectors who will walk away to prepare a report of the findings. The Senior Analyst interviewed was very confident when he exclaimed that if "given two weeks to work with a problem ship, I can turn it around 100 percent by the time I am done, and I guarantee progress."

2. FACT Assistance Visit

a. Team Composition

A FACT assistance visit is conducted by a senior enlisted SK, (E-7 or above). There have been rare occasions when the SKC or SKCS had to be augmented by a civilian MDS analyst from the SNAP II SMTT. However, most visits are done by a single person. The FACT SK's have extensive supply experience, having served as Leading SK's of afloat supply departments among their previous tours. They are also very knowledgeable in the SNAP II system. The two members of the unit have SMA inspector experience under their belts.

b. Pre-Visit Procedure

Requests for a FACT assistance visit are very informal in nature. Because the unit is new, its existence is not well known, as of yet, at the water front. Any ship that has identified a supply problem can get a visit with a telephone call to SMTT or the FACT analyst. SKCS De la Cruz also indicated that he checks SMA results and SMTT trip reports to see if a ship could use some help. He will call up such ships and offer his assistance visit. FACT analysts also check on ships that are getting

ready to deploy. Such ships may be too busy to make a request for an assistance visit or to even plan on one. If they accept, a visit could be scheduled. Emergency visits could be arranged, however, FACT prefers a minimum of a two week lead time.

c. A Standard Visit

Each FACT assistance visit is unique due to its nature. A visit could last from a couple of hours to two weeks, depending on the needs of the requesting ship. One week of assistance with the FACT analyst on board is average.

(1) The Opening Brief. Normally a FACT analyst will start his visit by talking to the ship's Supply Officer and the Leading SK. If the CO desires it, he can get an introductory brief, however, this is not regular practice.

(2) Training. After a short opening brief for the SUPPO, a FACT analyst will begin his visit by reviewing listings of SK functional areas (i.e., Service Market (SERVMART) Procedures, Shelf Life Programs, Radioactive Program, Material Outstanding Files, etc.) that he feels may have potential problems. These listings include SNAP II computer generated management reports. MDS areas are also reviewed if necessary. A full review and treatment of all areas can entail up to two weeks of an assistance visit.

There are two types of problems that the FACT analyst reported: (1) Those that the ship's company already knew about and do not know how to resolve; and (2) Those that the FACT analyst discovers in the process. The latter mostly involves those procedures that the ship's SK's believe they were performing correctly.

After each functional area is reviewed, the FACT analyst points out problems encountered and provides solutions to resolve them. He ensures that he has observed the ship's SK's perform the process correctly.

d. Post-Visit Procedure

(1) Debrief. A FACT debrief usually involves only the SUPPO and his Leading SK to turnover a report and debrief the completed visit. If the CO desires, he gets a debrief as to his Supply Department's status, progress, weakness, and areas requiring attention. FACT encourages the CO to support his SUPPO and his Supply Department.

(2) Reports. FACT reports are very informal and are usually handwritten and handed to the SUPPO and Leading SK. The report includes a list of things to do and follow-up procedures. It encourages the SK's to give FACT a call if help is desired. The report also includes FACT notes jotted down by the analyst during the visit. No other records are kept. Only out of town assistance visits are documented in formal trip reports.

(3) Follow-ups. The FACT analysts indicated that it is customary for them to give a visited ship a call to follow-up on the "to do list." Occasionally, they get calls from ships reporting on their progress.

C. MAINTENANCE DATA SYSTEMS (MDS) AND CONFIGURATION DATA BASE SMTT

1. Objective

In support of the findings and recommendations of the Blue Ribbon Panel, CDR Easton, in his point paper, pointed out that MDS processes on the majority of NAVSURFPAC units fell short of achieving satisfactory equipment configuration control. This was due to poor data quality and lack of MDS training, both of which cause very low confidence in the logistic support system.

The objective of the MDS and Configuration Data Base SMTT is to improve data quality and provide MDS training on board NAVSURFPAC ships. This SMTT unit prepares ships entering overhaul for the Integrated Logistics Overhaul (ILO)[16] process by reconciling the ship's data base with those of the Weapons Systems Files maintained at Ship's Parts Control Center (SPCC) and Ship Configuration and Logistic Support Information System (SCILSIS) maintained by the Naval Sea Systems Command (NAVSEA). Such a reconciliation is necessary for the system to know what equipment are on board different ships requiring parts support. The goal is to maximize data quality which has been found to be lacking in numerous NAVSURFPAC units [Ref. 10].

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[16]Commander-in-Chief, U.S. Pacific Fleet (CINCPACFLT) operates four Fleet ILO teams in the Pacific to oversee the logistic overhaul of all Pacific Fleet ships which include COMNAVSURFPAC units. As part of a complex process, shipboard stock of spare parts are usually offloaded to an ILO site where they are inventoried. Deficiencies are requisitioned and parts not required are excessed. One of the main goals is to ensure that the customer ship stocks spare parts to support equipment installed, and to excess those that are no longer required.

Heavily involved in the system-wide management of shipboard equipment configuration, this SMTT unit also acts as a liaison between a ship entering overhaul and its corresponding Configuration Data Manager (CDM), plus the different NAVSEA agencies that are involved in managing the particular class' program.

The MDS and Configuration Data Base SMTT is also responsible for the MDS portion of the regular SNAP II SMTT training package. MDS training is primarily intended for RPPO's, Workcenter Supervisors, line chiefs and line officers.

The data quality and training provided develop the credibility for the CDM's and other key logistic players which the logistic system has not developed itself for NAVSURFPAC.

2. MDS and Configuration Data Base SMTT Assistance Visit

The MDS and Configuration Data Base Assistance Team has a dual function: that of MDS training for RPPO's, Workcenter Supervisors, Chiefs and Officers; and Configuration Data Base Assistance to bring ships' configuration data bases in synch with that of the logistic support system (SPCC, SCILSIS, and CDM's).

The MDS training portion is conducted with the SNAP II SMTT in its regular assistance visits. Although a separate entity, the unit becomes an integral part of the regular SNAP II SMTT during routine assistance visits. Thus, this portion of the unit's function is basically discussed in the subsection addressing SNAP II SMTT earlier. The rest of this subsection will address the configuration portion of the unit function.

a. Team Composition

Currently, this SMTT unit is manned by one Senior Chief Machinist Mate (MMCS) who is well versed in SNAP II and 3-M documentation. He is also the team's configuration management expert, very knowledgeable in the ILO and SCILSIS process.

b. Pre-Assistance Procedure

Any ship going into overhaul and Integrated Logistic Overhaul is monitored by the Configuration Data Base Assistance Analyst. The analyst reviews ship's records and works closely with the ILO Team to ensure data base requirements are prepared prior to the ILO process.

c. Confi ıration Data Base Assistance

Any support requiring coordination is handled by this SMTT representative. This may include acting as liaison between the ship, CDM, and NAVSEA. For example, this is particularly important if there are stock deficiencies that have never been requisitioned before. These deficiencies will require NAVSEA funding. SMTT coordination, with help from other units of COMNAVSURFPAC, is essential for such actions.

d. Post-Assistance Procedure

After ILO, as a ship completes its overhaul, the Configuration Data Base Assistance Analyst monitors the completed ILO process. He checks with the ship to ensure that deficiencies are funded and requisitions are submitted into the supply system

for parts required to be carried in stock. He also sees to it that the ship's computer tape files are submitted into the system (CDM, SPCC, etc.) to bring everybody else's records to reflect what the ship has.

(1) Debrief. After the ILO process is completed and the ship is out of overhaul, the Configuration Data Base Assistance Analyst confers with the ship's Leading SK and SUPPO. He briefs them about the completed process and any pending action that may require follow-ups by the ship (i.e., monitoring stock requisitions submitted by the ILO Team into the system).

(2) Reports. There are no reports generated after a Configuration Data Base Assistance visit.

(3) Follow-ups. Ship's personnel are responsible for requisition follow-ups to ensure that the spare parts ordered for stock are monitored and transactions are completed as appropriate.

D. FOOD SERVICE MANAGEMENT (FSM) SYSTEM ASSISTANCE TEAM

1. Objective

The FSM Assistance Team's intent is not to train Ship's Food Service Mess Management Specialist (MS)[17] on how to run a food service operation or how to be a food service records-keeper. They train them how to associate manual food service

[17]MS's operate and manage Navy dining facilities. They order, inspect, and stow food. They maintain food service and preparation spaces and equipment and keep records of transactions and budgets for the food service.

records with the FSM automated system. This should lead to the efficient use of this computer based management and records-keeping tool.

Records-keeping is the weakest link in most food service operations afloat. MS's, by their nature, are customer service oriented. They know how to provide attractive and nutritious meals, and most of them enjoy their primary job of preparing meals. However, to them, keeping records is a task that just needs to be overcome. Most have become proficient in the unique manual records-keeping required by general messes afloat. However, there has been a fierce resistance in automating these records. SMTT is providing the training and education to overcome this resistance and is building the confidence in MS's with the system.

FSM is a PC based stand-alone system designed to assist ship's MS's in administering the acquisition, management, and control of ship's provisions (food) inventory. It also assists in producing food service operations reports and returns for submission to the Navy Food Service Systems Office (NAVFSSO)[18]. FSM is "menu driven" and permits all food service functions to be processed by selecting and entering data on terminal screens. The system uses a data base to process an event and/or a transaction during its operation. To understand that concept, it is important that the user is familiar with the Supply Department's food service operations records-keeping.[Ref. 23]

[18]NAVFSSO is the Navy office responsible for the administration and management of all Navy Food Service Operations afloat and ashore.

On their way to reporting to ships, MS's can attend a "C" school, where they can learn General Messes Afloat Operations records-keeping and attend a Basic FSM course. This training is offered by the Service School Command at Naval Training Center, San Diego. The automated system is taught at the introductory level for familiarization of terms and basic FSM functions. There is no other on-going training available for ship MS's in using the FSM automated system. The SMTT FSM Assistance Team is filling this void to provide a life-cycle training support for the system.

2. FSM Assistance Visit

a. Team Composition

The FSM Assistance Team has one civilian contractor analyst who is an FSM specialist. The current analyst is Mr. Cris Arreola, a retired Navy Mess Management Specialist who was one of the pioneers of the automated FSM system.

b. Pre-Visit Procedure

Any ship which has determined that it needs assistance in operating the automated FSM system can request an assistance visit by Naval message, by telephone, or requests in person. Emergency visits could be arranged depending on the urgency of the need. A crashed file or possible loss of accountability by a ship's food service operation is considered urgent enough for an emergency visit. On occasion, the FSM analyst had assisted MS's who walked in requesting his help on the spot. Currently, the FSM analyst can schedule a visit within one week to two weeks of a call.

c. Visit Procedure

Depending on the problem, an assistance visit can last from a few hours to several days. Again, depending on the circumstances of the problem, the analyst may ask the requesting records-keeper to report at the SMTT office with his computer and some back up files. If necessary to review other related shipboard files, the analyst will do a site visit.

An assist will commence with an analysis of computer generated reports. This step usually reveals the circumstances of the problem. Solutions are determined and the records-keeper is asked to perform the solutions himself, under the analyst's observation. Some on-the-spot and on-the-job training are also done if necessary.

After a visit, the Leading Mess Management Specialist, together with the Food Service Officer is briefed about the procedure that was completed and recommendations for follow-on actions are made.

d. Post-Visit Procedure

The FSM Assistance analyst does not routinely conduct any post-visit procedure. Follow-on training such as the FSM classroom training offered by SMTT could be recommended.

e. Reports

FSM assistance visits do not generate any external or internal reports. Out-of-town trips are covered by standard trip reports.

3. Classroom Training

The FSM component of SMTT also offers scheduled classroom training once a month. Eleven of these training sessions are offered at SMTT facilities inside the SAC building in San Diego. Once a year, a class is offered overseas.

These classes are open to all food service personnel. However, due to the high demand for the course and the limited facilities, the food service records-keepers, or the Leading MS's of afloat units are given priority.

The course trains students in the efficient use of the FSM computer module and does not train students in records-keeping. Hence, knowledge of basic food service records-keeping, normally learned in the manual mode, is a prerequisite to attending this course. Recently, emphasis is given to the following major FSM functions: error correction procedures, troubleshooting techniques, and utilization of management tool reports.

According to Mr. Arreola, the class works on "live" data. This means actual data brought by students in computer disks from their ships are used for training. He encourages students to bring live data where problems are present. This practice provides a more realistic learning environment, and allows the instructor to do actual corrections on problematic food service records of customer ships. It also allows the students to be drilled in real work environment scenarios.

E. RETAIL OPERATIONS MANAGEMENT (ROM) ASSISTANCE TEAM

1. Objective

The ROM Assistance Team is set up very similarly to the FSM. Like FSM, the ROM Assistance Team's intent is not to train Ship's Servicemen how to run a ship's store, or how to be a retail operations records-keeper, but to train them how to associate manual records with the ROM automated system and lead to the efficient use of ROM computer based management and records-keeping tools.

The ROM automated system is similar to the FSM system. ROM is a PC based stand-alone system designed to assist ship's retail store personnel in administering the acquisition, management, and control of ship's store inventory. It also assists in producing resale operations reports and returns for submission to the Fleet Accounting and Disbursing Centers and to the Navy Resale and S.rvices Support Office (NAVRESSO)[19]. Similar to FSM, the ROM System is "menu driven" permitting all resale operations functions to be processed by selecting and entering data on terminal screens. The system uses a data base to process an event and/or a transaction during its operation. It is important that the user be familiar with ship's retail operations records-keeping to understand the automated ROM system.[Ref. 24]

[19]NAVRESSO is the Navy office responsible for the administration and management of the Navy Exchange System and all retail operations afloat.

There is a training pipeline for Ship's Servicemen (SH)[20] on their way to reporting to ships. Included in the pipeline is a "C" school offering retail operations records-keeping. Just like in the FSM area, the automated system is taught in this school only at the familiarization or introductory level.

Retail operations require a fairly complex system of records-keeping. It follows that an automated system will not be any less complex. The "C" school provides a good baseline of skill in records-keeping, however, as mentioned before, the automated ROM system is not adequately covered in the instruction. Hence, there is reluctance in experienced records-keepers to convert to the automated system, especially this complex system. The SMTT ROM Assistance Team provides troubleshooting, life-cycle support training, and refresher training which are more in-depth than any available pipeline training. The ROM Assistance component of SMTT is providing the training and education to learn the system and make it more "user-friendly" for the common SH's.

2. ROM Assistance Visit

a. Team Composition

The ROM Assistance Team has one analyst assigned who is also a civilian contractor. The current Senior Analyst is Mr. Tom Tomas, a retired Naval

[20]SH's manage barber shops, tailor shops, ships' uniform stores, laundries, drycleaning plants, and cobbler shops. They serve as clerks in ships' stores, commissary stores, soda fountains, and warehouses.

Supply Officer. Formerly a Limited Duty Officer, he is familiar with all shipboard supply functions including retail operations.

b. Pre-Visit Procedure

Any ship who needs assistance can request it by Naval message, by telephone, or by requests in person. A series of ROM generated management reports will have to be prepared for analysis.

c. A Standard Visit

An assistance visit by the ROM Assistance Team can last from half a day to five days, depending on the needs of the ship being visited. If requested by the SUPPO or CO, an in-brief is provided by the analyst regarding the procedure to be conducted.

The first step in any visit is the analyst's printing of management reports from live data to ensure that the most current available is analyzed. The training requirement is usually determined from the status provided by the reports generated. Other problems identified by the Sales Officer, Leading SH or records-keeper are also addressed. Actual performance of ROM procedures are observed and on-the-job training is done using actual data from ship's retail operations.

d. Post-Visit Procedure

(1) Debrief and Reports. If requested, a debrief is provided to the Leading SH, Sales Officer, Commanding Officer and whoever the CO wants debriefed. The status of the operation, areas that require improvement, and recommended actions

are provided in the brief. No written reports are generated by the visit. For SMTT record purposes, an in-house trip report is filed by the ROM analyst.

(2) Follow-ups. Only in rare occasions are follow-ups conducted by the ROM analyst. Such occasions include reimplementation when a ship has to reinstall and reimplement its ROM system, and start reprocessing ROM transactions.

3. Classroom Training

The ROM component of SMTT offers scheduled classroom training very similar to the one offered by FSM. The similarities include scheduling, location, and mode of instruction. It even uses the same facilities used by FSM. The five-day course is considered refresher training with emphasis on the 16 major ROM functions, error correction procedures, troubleshooting techniques, and the use of ROM management tool reports.

These classes are open to all Ship's Servicemen. However, like FSM, there is high demand for the course and with limited facilities, preference is given to Ship's Store records-keepers.

Again, like FSM, the course trains students in the efficient use of the ROM computer module, not records-keeping. Knowledge of basic retail operations records-keeping is a prerequisite to attending this course. Students can bring their ships' ROM computer generated management reports. Mr. Tomas analyzes these reports to determine if any records-keeping problems exists. He also finds out if the problem is with the understanding of basic records-keeping or with the use of the ROM module.

F. MANNING

SMTT has military and civilian personnel assigned permanently. On occasion, some military personnel from SMA augment SMTT if required. This can occur due to scheduling, or due to the type of supply problems encountered.

1. Military Personnel

SMTT has one Navy Lieutenant assigned to it as the Officer-in-Charge. He is a Supply Corps Officer familiar with all the areas of expertise covered by the team.

In addition, SMTT has two Senior Chief Petty Officers (one Storekeeper and one Machinist Mate) and one Chief Petty Officer who is an SK. The latter was a recent transfer from the SMA team.

2. Civilian Personnel

There are nine civilian personnel assigned to SMTT. Of the nine, four are Maintenance Data Systems Specialists and three are Supply Financial Management Specialists. These two groups are assigned to SNAP II SMTT and are cross-trained about the other functions. There is one civilian assigned to FSM, and another to ROM. These latter two have their own specialties and do not cross-train with the others nor with each other.

All the civilian personnel support is provided by CACI Field Services Incorporated to support SMTT as specified in a support contract.

G. THE CACI INC. CONTRACT

To support its Supply Maintenance Training Team effort, COMNAVSURFPAC is using a Commander, Submarine Force, U.S. Atlantic Fleet (COMSUBLANT) contract with CACI Inc. to provide expertise and personnel support for SMTT.

1. Background of CACI

The following is a categorization of the CACI Inc. business enterprise used in its Annual Reports, recruiting ads, as well as marketing material, proposals and other reports:

> CACI is an international information systems and high technology services corporation. Founded in 1962, CACI is a world leader in computer-based information technology, systems engineering, custom software, integration and operations, imaging and document management, simulation, and proprietary data base and software products. The Company manufactures no equipment. CACI serves clients in all segments of government and commercial markets. Offices are located in major cities of North America and Western Europe with corporate headquarters in the Washington, DC, area.

2. Statement of Work

The following is a summary of the statement of work outlined in the CACI support contract:

1. Perform training in a classroom and on board ship in the areas of SNAP II operations in the MDS and SFM SNAP II subsystems.

2. Provide hands-on training in group and one-on-one settings in accessing and performing data input and extraction on the SNAP II data base in the MDS and SFM SNAP II subsystem.

3. Write instructional manuals, guidebooks, operations manuals and instructors guides pertaining to SNAP II SFM and MDS subsystems operations.

4. Update existing instructional manuals, guidebooks, operations manuals, and instructors guides to reflect all updates, system changes and new program features for each new release of update of the SNAP II operating files.

5. Provide feedback to COMNAVSURFPAC units relative to SNAP II updates or enhancement.

6. Prepare seminar packages with most current information relative to SNAP II shipboard operations in the areas of: 1) RPPO functions, 2) Workcenter Supervisor functions, 3) 3-M Coordinator functions, 4) ILO Team functions, 5) Chief Petty Officer functions, 6) Supply Officer functions, 7) Commanding Officer/Executive Officer functions.

7. Analyze ships' SNAP II reports and make recommendations for improvement.

8. Act as Type Commander's representative in communications and interacting with CDM's and SPCC to reconcile and correct deficient or unusable SNAP II data bases.

9. Provide feedback to COMNAVSURFPAC regarding overall condition and accessibility of data base information on how to improve the data.

10. Provide necessary assistance to the ship in replacing, restoring, or adjusting data base information to make the data base a more usable product for the end user.

11. Act as COMNAVSURFPAC representative and point of contact in the SCILSIS including but not limited to attending SCILSIS management conferences and Configuration Data Management seminars and conferences.

12. Analyze data contained in SNAP II data bases delivered to newly implemented ships and new construction ships, and provide feedback to COMNAVSURFPAC regarding data base quality and usability.

13. Analyze new programs and program design modification on new releases and updates to SNAP II system software for COMNAVSURFPAC and provide feedback to NAVMASSO via COMNAVSURFPAC.

14. Perform travel in the U.S. Pacific Fleet operating areas to provide all above functions as a mobile training team member.

3. Type of Contract

The support contract with CACI Inc. is an indefinite delivery, cost-plus-fixed-fee contract (contract number N00612-89-C8003). In this type of contract, the contractor is assured of a fixed fee and will be reimbursed for all allowable costs for indefinite quantity of services to be provided.[Ref. 25] In the case of the CACI contract, the basis of most work performed is manhours of services.

4. Civilian Contractor vs Military Personnel

The following rationale was presented by Mark Summers, CACI Inc. project manager for COMNAVSURFPAC, why it is advantageous to use civilian contractor personnel for SMTT:

1. SMTT function is a complex multiple tasking project as described in the statement of work in the contract. It requires highly qualified personnel that can provide continuity. CACI personnel are not as mobile as Navy people who are rotated around on a regular basis.

2. Personnel quality and qualification are more certain with a contractor provided team member. The military detailing system will usually provide staff with rank and general rating qualifications without regard to previous experience, etc. The Navy detailing system could very well assign a Chief Storekeeper who has no SNAP II experience. CACI can provide such detailed requirements for personnel.

IV. PRESENTATION OF DATA

A. DATA GATHERING PHASE

To capture the costs and benefits of the SMTT program, data for the thesis were collected using background research, interviews, and surveys.

1. Background Research

Preparation for the study began through research of existing studies of the subject areas, and pertinent Navy instructions that cover those areas. Other documents were also reviewed, including budget records and various reports.

2. Interview

Key personnel at COMNAVSURFPAC headquarters were interviewed for their first hand knowledge, views and opinions in the subject of cost and benefit of SMTT. These personnel included the SMTT Team Leader (LT Smith), military and civilian analysts assigned to SMTT, and various individuals from COMNAVSURFPAC.

3. Survey

A survey was formulated to get the views of NAVSURFPAC ships (and some former SUPPO's of NAVSURFPAC ships) as to the effectiveness of SMTT, and the cost and benefit of SMTT from their perspective.

As part of COMNAVSURFPAC N7 strategic review of supply support and assistance provided their fleet units, there was a need to know how the effectiveness of

the current set-up of the various assistance units is perceived by these units (NAVSURFPAC). To contribute to the effort, and to gain knowledge about the system, the authors offered COMNAVSURFPAC Code N7 some inputs for the planned fleet survey. Appendix A is the survey that COMNAVSURFPAC sent to 118 SNAP II NAVSURFPAC units. The survey forms were mailed out in late October 1991. As formulated, the survey addresses all the services offered by the COMNAVSURFPAC Supply Assistance Center. The authors attempted to segment the responses to isolate the positions which apply only to SMTT. As of this writing, only six responses have been received allowing only limited use of the survey for the benefit of this thesis.

In an attempt to validate the fleet survey, the authors solicited responses from Navy Supply Corps Officers who are currently stationed at the Naval Postgraduate School (NPS), and who were former SUPPO's of NAVSURFPAC ships in their last tour. These Officers were surveyed using a similar version of the fleet survey. This version of the survey is included as Appendix B. Ten responses to the Appendix B survey were received.

The surveys are nearly the same except that the Appendix A survey (fleet survey) had an additional section for the ship's CO/XO. Appendix A is more compact to minimize the amount of administrative time required to complete the survey. Tables 1 through 4 are a summary of data gathered through both surveys.

Table 1 includes data from the surveys of former Supply Officers attached to the Naval Postgraduate School. Due to FACT's recent implementation, none of the respondents had a chance to experience FACT assistance visits.

TABLE 1

SELECTED RESULTS OF NPS SUPPLY OFFICER SURVEY

Area Surveyed	**Quality of Training**	**Depth of Training**	**Coverage of Training**	**Expand Continue Discontinue**
SMTT Programmed Training	4	4	4	E - 30% C - 30% D - 0 ? - 40%
FACT	NA	NA	NA	E - 40% C - 10% D - 0 ? - 50%
SNAP II Data Base	4	3.7	4	E - 60% C - 20% D - 0 ? - 20%
FSM	4.3	3.6	4.1	E - 40% C - 50% D - 0 ? - 10%
ROM	4.8	4	4.5	E - 40% C - 60% D - 0 ? - 0
Program Cost to Receiving Ship			See Note 1	
Dollar Benefit for Receiving Ship			See Note 2	

Note 1: 30% had increased costs; 30% had no increases in costs; while 40% had no opinion.
Note 2: 80% had resource savings; 20% had no opinion.
Scale if applicable: 1 - poor, 3 - average, 5 - outstanding

Table 2 is a summary of selected results of the fleet survey section for Commanding Officers or Executive Officers of respondent ships. The data include only

preliminary and early returns to the survey. As of this writing, the bulk of the responses were not in yet.

TABLE 2

SELECTED RESULTS OF FLEET SURVEY, CO/XO

Area Surveyed	Quality of Training	Functional Area Improvement	Support in Correcting Problems
SMTT Programmed Training	3.5	NA	4.5
FACT	4.5	NA	4
SNAP II Data Base	4.3	NA	4.7
FSM	4	3	3.7
ROM	4.3	3.3	4
MDS/3M	NA	3.3	NA
SK Support	NA	3.8	NA
Scale if applicable: 1 - low, 3 - average, 5 - high			

Table 3 and Table 4 are summaries of selected results of the fleet survey section for Supply Officers of respondent ships. Table 3 involves quality, depth and coverage of provided SMTT training.

TABLE 3

SELECTED RESULTS OF FLEET SURVEY, SUPPO'S PART 1

Area Surveyed	Quality of Training	Depth of Training	Coverage of Training
SMTT Programmed Training	4	4	4
FACT	4.5	4.5	4.5
SNAP II Data Base	4.5	4.5	4.8
FSM	4	3.7	3.7
ROM	4	4	4
Program Cost to Receiving Ship			See Note 1
Dollar Benefit for Receiving Ship			See Note 2
Note 1: 40% had increased savings; 40% had no savings; 20% had no opinion. Note 2: 83% had no increased costs; 17% had no opinion. Scale if applicable: 1 - poor, 3 - average, 5 - outstanding			

Table 4 involves functional area improvement, quality of support in problem corrections, and inputs on program continuation or expansion. The data include only preliminary and early returns to the survey, with the bulk of the responses not yet in as of this writing.

TABLE 4

SELECTED RESULTS OF FLEET SURVEY, SUPPO'S PART 2

Area Surveyed	Support in Problem Corrections	More Frequent or Expanded Scope
SMTT Programmed Training	3.5	MF - 33% ES - 0 ? - 67%
FACT	4	MF - 50% ES - 0 ? - 50%
SNAP II Data Base	4.3	MF - 33% ES - 0 ? - 67%
FSM	2.3	MF - 17% ES - 0 ? - 83%
ROM	3.2	MF - 0 ES - 17% ? - 83%
Program Cost to Receiving Ship	See Note 1	
Dollar Benefit for Receiving Ship	See Note 2	
Note 1: 83% had no increase in costs; 17% had no opinion. Note 2: 50% had resource savings; 33% had none; 17% had no opinion. Scale if applicable: 1 - low, 3 - average, 5 - high		

4. Time Frame Convention

For convention purposes, the authors used a standard government fiscal year as a basis for period costing (i.e., fiscal year 1991 runs from 1 October 1990 to 30

September 1991). The thesis explores the costs incurred and benefits realized during 1990 and 1991 fiscal years.

B. COST OF SMTT

The authors categorized SMTT cost into: (1) operating cost of the SMTT organization, and (2) cost of SMTT to the receiving units (NAVSURFPAC afloat). SMTT operation includes manning, supply and administrative support, and travel. The manning portion is further broken down into military personnel and civilian contractor personnel. Customer units (i.e., ships requesting and receiving assistance visits) will have to incur cost to prepare for an assistance visit. Some of these identifiable costs include management report preparation, facilities set up, and scheduling.

The cost data for this thesis were obtained from review of records, SMTT reports, interviews, and surveys. For SMTT cost of operation, the authors previously envisioned a simple summation of dollar figures that are supposed to be readily available from budget records. As it turned out, it was not that simple because of the different manners in which the different budget accounts were set up. The customer costs were gathered from a survey of NAVSURFPAC afloat.

1. Cost of SMTT Military Personnel

There are currently four military personnel assigned to SMTT. They include a Navy Lieutenant (O-3), two Senior Chief Petty Officers (E-8), and a Chief Petty Officer (E-7). The obvious cost of the four military personnel will be their salaries and the dollar value of their fringe benefits.

It is notable that the dollar cost of military personnel is somewhat transparent to decision-makers of operating military organizations. Usually, the cost of personnel to these organizations is measured in billet numbers. Each billet is defined, among other things, by rank and by a set of skills required by the billet. The program cost of manpower resource for a certain undertaking will be determined by the number of billets required to perform the particular undertaking.

In order to determine the cost of the SMTT program, it is necessary to determine the costs of military personnel assigned to SMTT. Reviewing SMTT military incumbent pay records and assigning dollar values to the military personnel pay and benefits were one of the alternative methods the authors considered. However, this will make the cost of military personnel too dependent on the incumbents assigned to SMTT. It is true that the rank and rate of assigned SMTT personnel will be relatively stable. However, within the same rank/rates there will be pay differences. For example, military members with different lengths of time-in-service will be paid different amounts.

Due to the naturally high turn-over rate of military personnel as a result of assignment rotation, using the incumbent's pay scale as a basis is considered by the authors as impractical for this cost/benefit analysis. The authors prefer to determine the normalized cost of military personnel assigned to SMTT without regard of when and who will be assigned, and without arbitrarily assigning dollar values to each military personnel's fringe benefits.

The other option is to use government established rates, which are accepted where the costing of military services is required. Such rates are provided by the

Department of the Navy through a Comptroller of the Navy Notice.[Ref. 26] These rates capture both pay and benefits. Table 5 is an excerpt of this notice providing rates for Navy personnel that are likely to be assigned to SMTT.

With a Navy Lieutenant, two Senior Chief Petty Officers and one Chief Petty Officer assigned, the cost of military personnel at SMTT is $215,602 per year which extends to $431,204 for the two years covered by this cost/benefit analysis.

TABLE 5

GOVERNMENT RATES FOR SELECTED MILITARY PERSONNEL

Pay Grade	Rank or Grade	Hourly Rate	Daily Rate	Monthly Rate	Annual Rate
Officers					
O-5	Commander	$44.63	$357.02	$7,735	$92,824
O-4	Lieutenant Commander	37.85	302.77	6,560	78,720
O-3	Lieutenant	32.23	257.87	5,587	67,045
Enlisted Personnel					
E-9	Master Chief Petty Officer	$29.54	$236.33	$5,120	$61,445
E-8	Senior Chief Petty Officer	24.97	199.74	4,328	51,932
E-7	Chief Petty Officer	21.49	171.90	3,724	44,693

2. Cost of SMTT Civilian Contractor Personnel

All civilian personnel assigned to support SMTT are from CACI Inc. Their cost to SMTT is the total cost of the CACI contract. The contract comes in three lots or options which could be practiced if extension is desired by COMNAVSURFPAC.

Because it is an indefinite delivery contract, the amount of service to be performed up to the completion of the contract period is initially estimated.

SMTT supports programs that are sponsored by NAVSEA. SMTT generates enough interest at NAVSEA to make NAVSEA share with COMNAVSURFPAC the cost of the CACI contract. NAVSEA shares the contract cost at varying levels, depending on availability of funds. For the period 1 December 1990 to 31 December 1991 (third option exercised for 13 months), the cost was estimated at $695,000 of which $320,000 was picked up by NAVSEA. For the previous option that was concluded 30 November 1990, cost was estimated by LT Smith at $44,774 per month. This extends to $537,288 for the fiscal year, of which, NAVSEA picked up $360,000. SMTT's LT Steve Smith [Ref. 7] and CACI's Mr. Mark Summers [Ref. 27] indicated that this estimate is expected to be stable and will not vary during the period of the contract, and that actual costs will be within $1,000 of the estimates. LT Smith indicated that contract expenditure is relatively stable and uniform over time within contract lots. He stated that monthly expenditures have been equal for each month.

For the two fiscal years 1990 and 1991, the total cost of the contract is $1,178,826. This breaks down into $641,538 for fiscal year 1991,[21] and $537,288 for fiscal year 1990.

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[21]The figure was arrived at by dividing the option period by the number of months covered by the option and multiplying by 12. For FY 91, $695.000 was divided by 13 months (length of the lot/option) and multiplied by 12 to "annualize" the amount.

3. Cost of SMTT Supply and Other Supports

The cost of supply and other support for SMTT is determined through the Operational Target (OPTAR)[22] grant to SMTT. This covers all office supplies for SMTT. Their OPTAR grant for this purpose is $1,800 per quarter or $7,200 per year. For the two years covered by the thesis, total supply support is $14,400.

Another support cost of SMTT is the cost of CDR Garban's management service directly attributable to SMTT. He indicated in his interview that he spends about 40% of his time to SMTT related business. Prorated from Table 5, this cost will be $37,130 annually.

The total cost of supply and support for SMTT is $88,659 for the two fiscal years.

4. Cost of SMTT Travel

Cost of travel for SMTT is paid for by COMNAVSURFPAC's travel budget. For fiscal year 1990, SMTT **expended** $19,150 on travel. During fiscal year 1991, SMTT **obligated** $21,600 for travel.

The 1990 figure is the actual amount expended by COMNAVSURFPAC to cover SMTT travel obligations. This is the final amount after adjustments for price changes, etc. are made. The 1991 figure is the **obligated** amount which means SMTT has set aside $21,600 of COMNAVSURFPAC's travel budget as its estimate of SMTT's

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[22]OPTAR is a target amount authorized for expenditure that a unit should spend to support its operations.

actual travel expenditure. The amount actually **expended** will be different, depending on how the different travels were actually executed.

According to Ms. Sheila Jackson of the COMNAVSURFPAC Comptroller Office, the actual amount expended by SMTT for fiscal year 1991 will not be possible to identify because of recent reorganization of COMNAVSURFPAC travel accounts. In these reorganized travel accounts, COMNAVSURFPAC budget authorization for different units remain separate. However, when obligations are liquidated, especially by groups of accounts, one of which includes SMTT, they are all liquidated into one single account, not broken down into the different units. This system prevents the isolation of SMTT travel costs from the rest of the other units. The reorganization of COMNAVSURFPAC travel accounts took effect in June 1991.[23]

For the purpose of this thesis, the authors combined FY 1990 travel expenditures with FY 1991 travel obligations to arrive at a $40,750 total travel costs.

5. Cost to Naval Surface Force, Pacific Units

When preparing to receive an SMTT assistance visit, NAVSURFPAC units are expected to incur some costs. These may include time and manpower for setting up the mess decks into a classroom arrangement, generating management reports for SMTT

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[23]COMNAVSURFPAC has four travel account groups identified by different Unit Identification Codes (UIC). Each UIC serves a separate group of travel category. SMTT falls under one of these groups. Each unit is authorized a certain amount to spend for the unit's travel needs. There is one centralized budget account for all of COMNAVSURFPAC's Mobile Training Teams (MTT). SMTT is one of these teams which also includes EASTPAC MTT (mostly engineering training teams). The EASTPAC MTT travel clerk is handling travel accounting and travel order preparation for SMTT.

review (whether such reports are due or not), and working a ship's schedule to accommodate all the training.

After all, requesting SMTT means committing personnel time to prepare for an SMTT assistance visit, time which can be used for other purposes.

During an assistance visit, a large number of the ship's crew will have to attend training sessions. On the other hand, SMTT personnel have indicated that the assistance visit is conducted, as much as possible, on a not-to-interfere basis. Most of the training uses live data that can be processed for the ship's benefit. If the ship's schedule is worked out with enough planning, no evolution will have to be lost because of the SMTT assistance visit. Further, the visit itself can be utilized to maintain, if not increase productivity in some areas while SMTT personnel are on board.

In view of the above, the authors decided that the manhours spent by the crew in training with SMTT, will not be counted against cost. The actual set up, report generation and other non-training related activities preparing for a visit could be counted as cost if they were significant, however, as the partial survey responses show, standard SMTT preparation is insignificant.

6. Cost Summary

For the purpose of the thesis, the total cost of the SMTT program is $1,739,439 for the two fiscal years. Table 6 provides a summary of SMTT cost as discussed in the above section. The summary covers the period between 1 October 1989 to 30 September 1991.

TABLE 6

SMTT COST FOR TWO FISCAL YEARS

Item	Assigned Cost
Military Personnel	$431,204
Civilian Contractor Personnel (Cost of CACI Inc. Contract)	1,178,826
Supply and Support	88,659
Travel	40,750
TOTAL	$1,739,439

C. BENEFITS OF SMTT

The benefits of SMTT are categorized into tangible benefits and intangible benefits. Tangible benefits are those benefits that can be directly measured or are readily quantifiable (i.e., in terms of dollars, manhours, etc.). On the other hand, intangible benefits are those that cannot be directly identified or quantified in terms of dollars. The benefits identified for the thesis were gathered from reviews of SMTT records augmented or clarified by interviews, and from surveys as discussed in the previous chapter. These benefits fall into the following data groups:

1. Performance Measures or Pulse Points identified from SMA Statistical Analysis Program Reports
2. Tangible benefits identified from review of records and interviews
3. Tangible benefits identified from two different surveys
4. Intangible benefits identified from review of records and interviews

5. Intangible benefits identified from surveys

For the purpose of cost/benefit analysis, there is a need to assign quantity measures for all benefits, including the intangible ones. The cost/benefit measurable performance criteria requires a "shadow price" multiplied by changes in quantities measured (whichever units are used for intangible benefits) to convert changes in measures into dollar values. This will make the cost and the benefit units of measure homogeneous. Dollar value is the unit used for cost in the thesis.

In the case of tangible benefits presented in the thesis, the calculations are fairly straightforward. However, it proved to be problematic for the intangible benefits. "Shadow prices" could be assigned in terms of dollar values for every intangible benefit identified. As an example, a certain dollar value can be assigned to every percentage point in increase in inventory accuracy, unit of stock turn, etc. The authors investigated several avenues in pursuit of a "shadow price," however, they have decided that assigning quantity measures in this case would be difficult, too arbitrary, and unrealistic to serve any purpose.

1. Pulse Points

A method of determining the benefits of a program is to determine some measurable performance criteria that are observable before and after the implementation of that program. This also applies to SMTT.

Shipboard supply operations have a number of pulse points that managers and headquarters normally monitor. The authors investigated some of these from available

records in three areas of shipboard supply operation: Supply Management, Food Service Management, and Retail Operations Management.

The pulse points presented in Table 7 (page 71) were taken from a COMNAVSURFPAC SMA statistical analysis program report.[Ref. 28] This report was generated by a data base program that the COMNAVSURFPAC SMA Team began maintaining in January 1988. The program keeps track of numerous pulse points and management performance measures that are gathered during ships' Supply Management Assessments. Each period represents a competitive 18 month cycle.

a. Supply Management

The SNAP II system supports most if not all aspects of Supply Management operation. From a myriad of performance measures that could be used, the authors evaluated several areas under Supply Management.

(1) Gross Effectiveness. Gross Effectiveness is the percentage of supply (i.e., parts) requirements that an afloat supply department can fill from its on board stock (if out of 200 requisitions submitted by maintenance workcenters, 100 were filled from on board stock in ship's storeroom, the supply operation has a gross effectiveness of 50 percent). This performance is mostly influenced by the performance of both supply and maintenance personnel and their interface

(2) Net Effectiveness. Net Effectiveness is the percentage of supply requirements that are normally carried in on board stock that are filled (if out of 200 requisitions submitted, 125 are carried in the storeroom, and out of the 125 carried, 100

were filled, the supply operation has a net effectiveness of 80 percent). This performance measure is mostly influenced by Supply Management personnel performance.

(3) Depot Level Repairables[24] *Inventory.* Due to their high cost, DLR inventory is monitored separately, with the goal of 100 percent accuracy.

(4) Location Inventory. This performance measure is the accuracy of inventory records reflecting the location of parts in storerooms.

(5) Quantity Inventory. This performance measure is the accuracy of inventory records in reflecting the actual quantity of parts carried in storerooms.

(6) Ready Service Spares Inventory. This performance measure is the accuracy of Supply Department inventory records reflecting RSS in workcenters throughout a ship.

(7) Maintenance Assistance Modules Inventory. This pulse point measures the accuracy of Supply Department records in reflecting actual quantities of MAM's stored in shipboard workcenters.

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[24]Depot Level Repairables (DLR's) are usually high cost spare parts, that if broken, are turned in to the supply system for repair to be ready for reissue. Every time a DLR is requisitioned, a turn-in (old broken part, or carcass) is required to be turned in for the requisitioner to be charged only the net price. If there is no turn-in, the requisitioner will be charged the much higher standard price and will be required to document the disposition of the old DLR not turned in.

(8) Material Obligation Validation. This pulse point measures the accuracy of a ship's outstanding requirements (i.e., only materials that are still required should be outstanding, and those that are no longer required should be canceled).

b. Food Service and Retail Operations

The rest of the pulse points (Food Service and Retail Operations Pulse Points) analyze inventory accuracy except Retail Operations Stock Turn (sales divided by beginning inventory of a ship's store).

TABLE 7

COMNAVSURFPAC PULSE POINT DATA

	Data for Grading Cycles Indicated		
Performance Measures (Pulse Points)	**Jan 88 - June 89**	**Jul 89 - Dec 90**	**Jan 91 - Jul 92**
Supply Management Pulse Points			
Gross Effectiveness	52.9%	50.2%	46.1%
Net Effectiveness	75.0	73.2	70.1
Depot Level Repairable (DLR) Inventory	94.7	97.6	98.1
Location Inventory	93.5	95.4	96.1
Quantity Inventory	91.5	92.4	91.4
RSS Inventory	91.1	82.0	85.5
MAM Inventory	88.2	91.0	89.6
MOV	85.2	85.7	87.0
Food Service Inventory Validity Pulse Points			
Fresh Provisions	91.3	88.6	86.7
Dry Provisions	91.3	89.0	88.2

Retail Operations Pulse Points			
Tax Free Inventory	99.6	98.8	99.2
50 Item Inventory	98.9	99.1	98.8
25 Item Inventory	98.3	97.8	98.0
Stock Turn	5.8	5.4	5.2

2. Tangible Benefits Identified from Review of Records and Interviews

Review of SMTT records, including trip reports, indicate numerous dollar savings and cost avoidances directly attributable to SMTT. These dollar benefits were also cited in most of the interviews of SMTT personnel.

Table 8 is a chart of dollar benefits identified from Trip Reports, and personal files of LT Smith and SKCS De la Cruz. A majority of the savings are due to correction of records or procedures related to supply operations' material outstanding files (MOF), excess spare parts (ESP), and recovery of erroneous excess.

TABLE 8

TANGIBLE DOLLAR BENEFITS FROM TRIP REPORTS

Ship's Name	Savings or Cost Avoidance
USS CURTS	$345,000
USS GRIDLEY	20,000
USS MARVIN SHIELDS	5,000
USS CUSHING	50,000
USS JOUETT	145,000
USS THACH	260,000
USS FLETCHER	100,000
USS BARBEY	105,000
USS GEORGE PHILIPS	75,000
Total	$1,105,000

This list is not all-inclusive, and numerous instances of tangible benefits were probably not captured. LT Smith estimated that these figures are very conservative because there is no standard procedure to keep track of the dollar benefits. Remarks from survey results received so far indicate the savings and cost avoidance dollar amounts are probably valid.

3. Tangible Benefits Identified from Surveys

a. Naval Postgraduate School Survey

The survey of former COMNAVSURFPAC Supply Officers indicated a dollar savings of $343,000 from the ten responses (surveys) received. Labor savings totaled 520 manhours.

b. Fleet Survey

The fleet surveys provided little information on tangible benefits for the purpose of this thesis. The survey consisted of questions formulated to minimize the administrative time imposed on the respondents, and did not question dollar totals of costs or benefits from the assistance visits. Asking for specific figures were deemed to be too imposing on the busy schedules of fleet operators. All the subjective questions answered did not have any tangible benefit data in terms of money or manhours saved that can be attributed to the SMTT assistance visits.

4. Intangible Benefits Identified from Review of Records and Interviews

The interviews conducted were with SMTT personnel and other supply assistance people, who are all advocates of supply and assistance visits. The main theme of the interviews was the program should be continued and expanded to allow more thorough coverage of COMNAVSURFPAC ships. They thought the non-imposing assistance format actually made it easy for the ships' crews to assimilate information about the topics being covered. Supply inspections, they felt, were possibly needed,

however, a training/assistance forum was continually needed to keep the fleet knowledgeable.

The main problems cited that cause fleet supply and maintenance interface weaknesses were high turnover of the crew and inadequate pipeline training in supply and maintenance systems, notably SNAP II. The automated food service and retail operations knowledge suffered due to the same reasons listed previously. SMTT directly addresses these problems by offering appropriate training, thereby relieving loss of talents as a result of high turn-over.

Moreover, the interviewees attribute improved inventory records, better shipboard configurations, increased level of knowledge, more thorough MDS familiarization, and better supply-maintenance interface to SMTT assistance. They think that those ships who have received SMTT assistance have maintenance personnel who have a better appreciation of supply functions, and supply personnel who appreciate maintenance problems.

5. Intangible Benefits Identified from Review of Records and Interviews

The interviews conducted were with SMTT personnel and other supply assistance people, who are all advocates of supply and assistance visits. The main theme of the interviews was the program should be continued and expanded to allow more thorough coverage of COMNAVSURFPAC ships. They thought the non-imposing assistance format actually made it easy for the ships' crews to assimilate information about the topics being covered. Supply inspections, they felt, were possibly needed,

however, a training/assistance forum was continually needed to keep the fleet knowledgeable.

The main problems cited for fleet supply and maintenance interface weaknesses was high turnover of the crew and little pipeline training in supply and maintenance systems, notably SNAP II. The automated food service and retail operations knowledge suffered due to the same reasons listed previously.

6. Intangible Benefits Identified from Surveys

a. Naval Postgraduate School Survey

The overall theme of the surveys was that assistance training is very much needed and desired by the fleet. All the indicators (quality, depth, and coverage of SMTT assistance training), presented in Table 1 (the former COMNAVSURFPAC Supply Officers stationed at NPS survey results), *exceeded the median score of three* (five is outstanding and one is poor). Several officers stated that they could not have survived without the SMTT assistance visits. They wanted most of the functions SMTT provides to be expanded and all the functions continued. The primary need for the SMTT training was called out by the respondents for the time periods prior to SMA's and after regular overhaul.

b. Fleet Survey

The few fleet survey responses received indicated that the SMTT assistance visits had a very positive impact on their operations. They cited high turnover of ship's crew as the main reason the assistance visits were needed and productive. They

cited the SMTT assistance as great preparation for Supply Management Assessments. Many said that having an SMTT staff investigating fleet-wide problems and disseminating the information was a positive planning tool for shipboard Supply Officers.

Some inconsistencies were noted. Supply Officer graded shipboard functional area improvements in SK accountability, sustainability, and level of knowledge averaged only 2.9 (1 - low, 3 - average, 5 - high). Functional area improvements (accountability, crew support, and level of knowledge) for the SH's averaged 3.4, but for the MS's, it averaged only 2.5. Also, the fleet SUPPO's perception of SMTT support in correcting FSM problems averaged 2.3. These inconsistencies are analyzed in the next chapter.

V. ANALYSIS OF DATA

A. ANALYSIS OF BENEFITS

1. Analysis of Pulse Points

All the performance measures or pulse points presented above are observable, measurable, and whose trends can be monitored. A review of Table 7 (page 71) shows mixed trends among the different pulse points:

1. Supply effectiveness show declines in both net and gross effectiveness.
2. Supply inventories show improvements.
3. Provisions inventories show declining trends.
4. Retail operations merchandise inventories are more or less unchanged during the periods shown.

Does the data indicate that the different programs COMNAVSURFPAC has implemented (SMTT being one of them) did have any influence on ships' performance measures? If they did, did they only have mixed results? The data shown cannot answer these questions. At best, the pulse points data as presented indicates some trends with regards to the effectiveness of SMTT, however, no definitive conclusion should be drawn.

First, the data does not cover fleet performance prior to SMTT implementation. For the cost/benefit aspect of the thesis, performance data from a

period prior to 1937 is more desirable, however, they are not available. These records were not kept until January 1988, when SMTT was already in existence. Hence, all sets of measures available for analysis were collected after the implementation of SMTT. There were no records available to determine the values of the pulse points prior to SMTT. Also, the data for the last cycle presented (January 1991 to June 1992) includes only 26 ships inspected up to the date of the report (23 October 1991), with over 110 ships still to be inspected. The low number of ships included puts doubt as to whether these values represent fleet-wide performance.

Second, if there were any discernible trend either towards improvement or away from it, it would be misleading to attribute such trend to the SMTT program alone. There have been numerous changes and other programs that have occurred since Admiral Taylor's Blue Ribbon Panel report. These include the restructuring of the old Supply Management Inspection into its present form of Supply Management Assessment. There are also other initiatives occurring in the fleet paralleling these two programs that can affect the performance measures.

It should be noted that the current emphasis of SMTT is on MDS, the SCILSIS process, and configuration management. LT Smith and LT Allison (SMA Senior Inspector) indicated that the declining trend in supply effectiveness precipitated this shift in emphasis. They also indicated that the emphasized efforts will not be reflected in Supply Effectiveness pulse points for a long time due to the long turn-around time of the SCILSIS process. It takes up to 27 months for a report of a change in configuration to be reflected in storeroom allowances. This very long turn-around is

another area that is drawing the attention of the logistic support system and is being studied.[Ref. 7], [Ref. 29]

Another approach could have been taken in lieu of the more desirable "before-and-after-effects" of the SMTT program. The supply/maintenance performance of ships that have received SMTT assistance can be compared with those that have not received SMTT assistance. However, if there is any difference between the two groups' performance, it will be difficult, if not impossible, to determine if the difference is due to the effect of SMTT or some other factors. There are different reasons why different ships get SMTT assistance visits. If an afloat supply operation is doing well, the CO or SUPPO may decide that they do not need SMTT assistance and they will not request a visit. This supply operation will probably score well in any measure of pulse points, possibly comparable to those that have received SMTT assistance. On the other hand, there may be some ships that take advantage of any external assistance whether they need it or not; and there are those who truly need assistance because their performance is lacking. The authors have not found a way to distinguish between the different groups and analyze them in isolation. The different scenarios make this approach of little value for cost/benefit analysis.

2. Analysis of Tangible Benefits Identified from Review of Records and Interviews

Material Outstanding Files contain records of all outstanding supply requisitions awaiting issue from the system. There are instances when a requirement

may no longer be needed (i.e., wrong part ordered and was corrected, part received from another source, etc.). If a requirement is no longer needed, the outstanding requisition should be canceled to recoup obligated money that can be used for other requirements. The Material Obligation Validation (MOV) process is supposed to validate every outstanding requisition of a ship. However, not all ships are familiar with the procedures, or they are not doing it on a regular basis. SMTT analysts were able to identify such cases thereby recovering funds, which are unnecessarily tied up for unneeded requisitions, that the ship can use for other purposes.

Due to a variety of reasons, ships eventually end up with excess spares. These are parts without any authorized allowances to be stocked. Excess for some ships may be shortages for others. COMNAVSURFPAC has an Excess Spare Parts (ESP) Program wherein parts identified as excess are matched with fleet shortages. Requirements filled from ESP are satisfied at no cost to the end-user, allowing funds to be used for other purposes. SMTT, in the course of their assistance visits, are able to identify ESP that can be diverted to those who need them, resulting in realized savings or cost avoidance.

Ships are encouraged to turn in to the supply systems any excesses from their stock (materials over authorized allowance). Space on any ship is at a premium. This situation is a good motivator for Supply Officers to get rid of excess stock to allow better use of storeroom spaces. Excess spares can end up in the supply system, or in the Defense Reutilization Maintenance Office (DRMO) for further disposition. Occasionally, the Type Commander (COMNAVSURFPAC in the case of surface combatants), can get

partial credit from the supply system for these turn-ins. Depending on the need of the supply system, this credit is around ten cents to the dollar amount of the material turned in (a low partial credit rate). There have been instances when SMTT analysts were able to catch parts misidentified as excess, allowing ships to retain the parts and avoid costly reorder if discovered too late.

From the interviews with LT Smith and SKCS De la Cruz, the authors gathered that most of the problem discoveries, corrections, and resulting tangible benefits were affected by the FACT component of SMTT. FACT accounted for most of the quantifiable and identifiable dollar savings even though it was started only in March 1991, having done less assistance visits than the other SMTT components. Due to the nature of FACT assistance, deeply involved in Supply Management operation, and closely reviewing records and management reports, FACT analysts are in a better position to find supply discrepancies that may not be obvious to the SNAP II SMTT analysts. Although not required, FACT analysts documented dollar amounts of resulting corrections, whether they are cost savings or cost avoidance.

Having assisted only nine ships as of August 30, 1991, and having documented most of the savings and cost avoidance benefits identified, FACT has a potential for generating an even larger amount of tangible benefits. Although highly speculative, his $500,000 documented benefits can be extrapolated into over $2M for two fiscal year, assuming 20 visits per year. FACT's tangible benefits are included in the data presented by Table 8.

Given more time, and more ships to visit, FACT can justify an expanded scope of operation, with more personnel assigned, covering more of NAVSURFPAC on a regular and more frequent basis.

3. Analysis of Intangible Benefits Identified from Interviews

The interviews with the SMTT staff revealed many intangible benefits from their perspective. From increased readiness, and an upswing in perceived supply and maintenance efficiency, to savings of manhours and Navy money (which are currently intangible and undocumented), many benefits were apparent.

Even though the interviewees were all advocates of supply/maintenance assistance visits, the lengthy list of benefits they cited seem to address continuing need for assistance in agreement with the Blue Ribbon Panel Report.

4. Analysis of Benefits Identified from Surveys

The survey of former NAVSURFPAC unit SUPPO's who are now stationed at Naval Postgraduate School (NPS) indicate the following trends and attitudes (refer back to Table 1):

1. The quality and coverage of training were consistently given high ratings by all respondents, scoring an average of four or above in a scale of five.
2. Depth of training was rated only slightly lower than the quality and coverage of training.
3. Cost to prepare for SMTT were considered insignificant.
4. No respondent considered discontinuing any program.

5. Of those who responded, roughly half wants to continue the programs, the other half wants not only to continue, but to expand the programs. No one wants the programs discontinued.

The trends indicate that SMTT is highly regarded by those surveyed. The summary presented are only averages, however, there were no "outliers" from the data that can show scores far from the presented averages. In addition, no respondent wanted any SMTT component discontinued.

The authors found it interesting that even though none of the respondents at NPS experienced any assistance from FACT, 20% of those who responded favor continuing the program, and 80% wanted FACT to be expanded. It could be deduced from this particular information that supply operators in the fleet want more assistance to be available.

The dollar and manhour benefits or $343,000 and 520 manhours respectively as identified in the NPS survey showed that there are quantifiable and tangible benefits perceived by this group of former NAVSURFPAC Supply Officers, whose perspectives are different from those of SMTT personnel. The authors want to point out that there is no overlap of data between the NPS SUPPO group and those cited in the SMTT staff interviews. The authors reviewed the units involved to ensure that no dollar benefits were double-counted.

The fleet surveys lead to the same conclusions as the NPS survey. Many of the Supply Officers felt that they could use all of the assistance training that was available. They were pleased with the job that the SMTT was providing. Several

recommended making SMTT visits mandatory prior to SMA's and after regular overhaul periods.

From the small sampling of fleet Supply Officers, it is interesting to note that in the SK, and MS arenas, the average score in functional area improvement after an assistance visit was 2.9 and 2.5, respectively. These results were the only ones in both surveys (NPS and fleet) that showed scores below the median (except for fleet SUPPO's perception of SMTT Food Service Management Team's support in correcting problems, which averaged 2.3 (Table 4)). These data may mean one of three things: (1) that even after the SMTT assistance, many Supply Officers do not feel their SK and MS personnel have improved enough, (2) SMTT assistance is not as effective as the SUPPO's expect, or, (3) the number of early results included for the thesis is too small to represent the total response which is not yet received as of this writing.

These data may be inconclusive, or it could point out a need for more thorough formal training and SMTT assistance or more SMTT follow-up to coax improvement.

Several of the responding Supply Officers made positive recommendations for SMTT. These recommendations are included with those of the authors' at the conclusion of the thesis.

B. SUMMARY OF ANALYSIS

Strictly speaking, the analysis effected by the thesis does not fall into the cost/benefit category. First, there are data limitations and a limited possibility of

obtaining accurate measures of SMTT costs. Even more so, is the difficulty of obtaining quantifiable measures of SMTT benefits. Costs and benefits are hard to isolate in this case.

Second, "shadow prices" were not assigned to the differences in some measures of performances and benefits identified for reasons already discussed. This precludes a true cost/benefit analysis. Instead, correlative measures were used which are more applicable to cost/effectiveness analysis. Of course, there is nothing inherently wrong with the cost/effectiveness analysis performed in the thesis. However, it does mean that the benefits identified cannot be directly compared to the cost as presented.

The authors believe that for this thesis, even if the difference between cost/benefit and cost/effectiveness analyses is taken into account, cost/effectiveness analysis will yield information that should be useful for decision-makers in program evaluations. Homogenous comparisons between the dollar value of costs and the dollar value of benefits may not be made, however trends are shown, and qualitative differences are compared.

"Flag waving" by the interviewed SMTT personnel may be perceived. However, the positive benefits identified were not only the opinions of SMTT personnel (even if the authors assume their possible bias), but positive benefits were also identified from the perspective of former and current NAVSURFPAC SUPPO's, and NAVSURFPAC CO's and XO's.

C. ANALYSIS OF SMTT EFFECTIVENESS

SMTT dollar benefits and other intangible benefits may exceed the cost, however, is it meeting its intended purpose? The chapter on SMTT procedures showed that SMTT is addressing every area of the Blue Ribbon Panel Report and its findings.

1. Overall Training

The whole range of SMTT training available addresses the general need of NAVSURFPAC operators by facilitating a closer interface between line and supply personnel. SMTT makes it a point that the maintainers cannot succeed without supply support, and supply support will be marginal at best if maintenance does not perform properly their share of the MDS. Supply can do its job efficiently only if the line personnel do their part in the MDS, and if they (the line personnel) understand both the maintenance and SFM function of the SNAP II system. The line personnel must do this while closely managing ship configuration so they can communicate to the supporting Supply Department and the logistic system the equipment configuration that needs support on board their ship. Likewise, maintenance can only be successful in attaining the desired level of readiness if the Supply Department is aware of their needs, and their needs are properly identified in the ship's configuration management.

Also, SMTT provides for all the range of shipboard training needs not adequately covered by the Navy Training pipeline to suit the needs of NAVSURFPAC. This training includes the efficient application of the SNAP II system, automated FSM and ROM.

In addition, SMTT confronts other concerns not addressed by the Blue Ribbon panel but which are relevant throughout NAVSURFPAC as expressed by CDR Easton in his point paper.[Ref. 10] SMTT provides a continual vice temporary solution to bridge the missing link in the training field. SMTT provides on board training and assistance visits, classroom training and seminars, training aid development, analysis of performance "pulse points", and shipboard inventory and configuration management aids. SMTT provides the confidence for supply and maintenance personnel in dealing with a complex system. SMTT has always made itself available when needed.

2. Supply Personnel Training

Together with the deep involvement of FACT, while assisting a ship's supply operation, SMTT SFM function analysts attempt to fill SK training deficiencies in SNAP II application and routine Supply Management troubleshooting either in the SNAP II, or in the routine operation of supply support. Additionally, experienced FSM and ROM analysts provide the training of SH's and MS's. SMTT provides all the training needs of most if not all supply personnel on NAVSURFPAC ships.

3. Line Enlisted, Repair Parts Petty Officer and Line Officer Training

The MDS function analysts assigned to SMTT provide the different levels of training required by the line community. From the hands-on maintenance man, to the workcenter supervisors, workcenter chiefs, and their line Division Officers and Department Heads, each of the groups receives training tailored to each group's needs.

4. Supply Officer Training

A ship's Supply Officer is the central point of contact for all SMTT assistance on a ship. All information passes through him, including SMTT evaluation of the ship's supply and maintenance operation, discrepancies and deficiencies in these operations, methods to correct those problems, and related training reports. He prepares the ship for an SMTT assistance visit, and is present in all the briefs. The whole SMTT visit is a rich training experience available for the SUPPO.

5. Data Quality

As explained in the chapter on SMTT procedure, SMTT offers training using live data from ship's operations in all aspects of an assistance visits. This provides the opportunity to fully evaluate the quality of data (or lack of it) on an assisted ship. Upon the completion of a visit, it will be safe to assume that data quality has been addressed in the assistance effort, and training is provided by experienced analysts based on their assessment of the data.

VI. CONCLUSIONS AND RECOMMENDATIONS

A. CONCLUSIONS

The analysis leads to the conclusion that the whole Supply Maintenance Training Team program is meeting the goals it was set to accomplish and that the benefits of operations of the different SMTT components exceed the costs in varying degrees.

This conclusion is arrived at from the whole context of the data gathered. This includes interviews and reviews of records, and surveys. The interviews were conducted only with personnel working for the Supply Assistance Center. The records reviewed were maintained by the same personnel. The surveys provide only limited data, which at best, can point to some trends which may be inconclusive. This is due to the limited number of fleet survey responses received and the population size and timeframe involved with the Naval Postgraduate School Supply Officers' survey.

B. RECOMMENDATIONS

The authors have developed the following recommendations based on the information, to increase the SMTT program's effectiveness:

1. Expand Cost Effective SMTT Programs

Some SMTT components, such as the FACT program, are promising undertakings that merit further investigation to determine the possibility of its expansion.

A FACT analyst can be assigned to ships for a certain period of time as may be required. SNAP II operations that are not getting excellent or above in supply support or sustainability and accountability during SMA can be considered for a FACT visit. A FACT force of four senior and experienced storekeepers can cover those NAVSURFPAC ships not making excellent or above in its Supply Management operations, approximately 60 ships.[Ref. 30] This assumes 15 - 20 ships will be visited every year by each analyst. Each visit is about two weeks long. The rest of their time can be spent for administrative purposes, training, updating of manuals and related activities.

2. Automatic SMTT Assistance Visits after Overhaul

Mandatory scheduling of SMTT assistance visits after regular overhaul (or any extended yard period) will ensure the supply-maintenance interface starts out on the right track at a critical time. With the installation of new equipment and the arrival of many new personnel on the ship, it should be a mandatory assist visit.

This mandatory scheduling will also allow the SMTT team to better allocate their valuable resources in advance.

3. Automatic SMTT Assistance Visits after Supply Management Assessment

Areas receiving grades of excellent or higher need not be automatically assisted.

Immediately after SMA, when problem areas are already identified, SMA experience is still fresh among the supply personnel. Assistance can be directed towards

those identified problems and weaknesses or where there is a potential for future problems.

4. Monitor Costs and Benefits

A system of keeping track of SMTT cost and benefits, that could be broken down into the different SMTT components could be implemented to allow a continuing cost/benefit analysis of the program (this is also applicable to any COMNAVSURFPAC program).

During a period of budget cuts and the current trend in military drawdown, every program will be closely scrutinized and challenged from numerous sectors. There will be no place for marginal and speculative programs in this era.

To allow for a systematic review of program effectiveness, each program, and its components can be subjected to cost/benefit analysis.

In the case of COMNAVSURFPAC's Supply Assistance Center (SAC), the authors attempted a cost/benefit analysis of its SMTT component. The cost/benefit analysis completed for SMTT was not clear cut due to the manner records were maintained. The current records-keeping methods do not lend themselves to cost/benefit analysis, and even less to a more desirable continuing cost/benefit analysis. Costs of various travels were not grouped separately making it impossible to identify exact costs. The same is true for the benefit portion.

During the thesis process, the authors identified areas where separate cost/benefit analysis could be useful. It would have been more desirable to do separate cost/benefit analyses for the different SMTT components. For example, FACT looks

like it may be resulting in more tangible benefits than the other SMTT components. FACT benefits are measurable and are effective justification of program costs. However, the cost of operating FACT is not documented separately, and cannot be isolated from the rest of the other costs due to the current system of keeping records. Further, it is not standard procedure for SMTT to keep records of all identifiable benefits that can be directly attributed to SMTT, more so with regards to separate SMTT programs. There is no doubt that the documented, hence perceived, tangible and intangible benefits of the SMTT program will greatly increase if there is a conscious effort to keep track of these data.

The records-keeping suggestion may be challenged as too cumbersome administratively. However, COMNAVSURFPAC already keeps track of budgets with computers, using a system of cost codes that lends itself to grouping expenditures into different identifiable categories very well. Also, a motivation exists for SMTT analysts to keep records of any identifiable benefits resulting from their assistance visits. These records will provide them a medium through which they can communicate to the appropriate managers the benefits of their programs on a continuing basis. Of course their efforts should be tempered with reviews encouraging conservatism to avoid the perception of exaggerated data. The current system of trip reports can accommodate this records-keeping. It can also facilitate a system of feedback where accomplishments are recognized and rewarded in the SMTT organization.

5. Adjust for Fleet Amelioration

As the SNAP II, FSM and ROM systems mature with SMTT assistance visits in the fleet, the level of corporate knowledge by mid-grade and senior petty officers should increase progressively. As they become experts in the systems, better on-the-job training should keep the systems in good running order, and formal SMTT assistance visits may not be needed as much. There will always be a need for Supply assistance, however, it should not perpetuate at the same level and frequency as knowledge grows. The level of assistance should be made consistent with the needs of the fleet.

6. Follow-on Study

There are many avenues for increased study of the effectiveness of COMNAVSURFPAC's SMTT in particular, and the whole Supply Assistance Center in general. When the bulk of the fleet survey responses are received, this cost/benefit analysis could be reevaluated.

The importance of further study grows in times of reduced budgeting for all programs, and with a smaller Navy. A smaller Navy should not necessarily translate into a smaller SMTT. A smaller Navy should be a more efficient Navy. An expanded system of assistance may bring the answer.

APPENDIX A

FLEET SURVEY OF CO/XO'S AND SUPPLY OFFICERS

From: Commander, Naval Surface Force, U.S. Pacific Fleet

Subj: SUPPLY ASSISTANCE CENTER REVIEW

Encl: (1) Supply Assistance Center Survey

1. As part of the ongoing assessment of our Product and Services, we would like to know what you, our CUSTOMER thinks of the Supply Assistance Center. Your perceptions and needs are most important to us as we strive to constantly improve program quality by implementing changes to our approach, curriculum, and focus.

2. As you are aware, the Supply Assistance Center is made up of the Supply Management Assessment Assistance Team (SK, MS, SH), Supply Maintenance Training Team, Fleet Assistance Correction Team (FACT), SNAP II MDS and Data Base Assistance, Automated Food Service Management (FSM) training, Automated Retail Operations Management (ROM) Training, and 3-M Assistance Team. In this period of deficit funding it is imperative that we take advantage of programs which improve our ability to fulfill mission responsibilities at lower costs. Likewise, it is essential that we identify new programs which are required to enhance readiness and sustainability.

3. Your assistance is critical to adequately evaluate the success of our Supply Assistance Center programs. Accordingly, please give careful consideration when completing Enclosure (1). Request you return the survey to Commander, Naval Surface Force, U.S. Pacific Fleet, San Diego, California 92155-5035 (Attn: Code 714) by 28 October 1991.

4. Thank you for taking the time from your busy schedule to help us assess our products and Services.

L.E. FLOHR
By direction

Distribution: (SNAP II ships)
NAVSURFPAC AFLOAT SOCAL

SUPPLY ASSISTANCE CENTER SURVEY

This customer survey is broken down into two sections: One for the CO/XO to provide value of our services from their perspective, and a more detailed section for the SUPPO to rate the products/services provided from the perspective of the impact of shipboard logistical support and also provide SUPPO opportunity to recommend changes to offered products/services.

SECTION I: For the CO/XO:

1. Have you ever received assistance from:

SMA Supply Assistance Visit		
Storekeepers	YES	NO
Ship's Servicemen	YES	NO
Mess Management Specialists	YES	NO
SMTT as follows:		
SMTT Programmed Training	YES	NO
Fleet Assistance Correction Team (FACT)	YES	NO
SNAP II Data Base Assistance	YES	NO
Food Service Management (FSM) Training	YES	NO
Retail Operations Management (ROM) Training	YES	NO
3M Assistance Visit	YES	NO

2. Please rate your perception of the quality of training you received on each item you responded with "yes" above according to the following scale:

1 - poor
3 - average
5 - outstanding

SMA Supply Assistance Visit					
Storekeepers	1	2	3	4	5
Ship's Servicemen	1	2	3	4	5
Mess Management Specialists	1	2	3	4	5
SMTT as follows:					
SMTT Programmed Training	1	2	3	4	5
Fleet Assistance Correction Team (FACT)	1	2	3	4	5
SNAP II Data Base Assistance	1	2	3	4	5
Food Service Management (FSM)	1	2	3	4	5
Retail Operations Management (ROM)	1	2	3	4	5
3M Assistance Visit	1	2	3	4	5

3. Please rate the following function area improvement as a result of the last SMA/3M/SMTT assistance training:

0 - don't know
1 - low
3 - average
5 - high

Ship's Functional Areas:						
MDS/3M	0	1	2	3	4	5
Food Service	0	1	2	3	4	5
Retail Operations	0	1	2	3	4	5
Storekeeper Support	0	1	2	3	4	5

4. To what extent did the assistance teams provide support in correcting problems identified during the visit:

1 - poor
3 - average
5 - outstanding

SMA Supply Assistance Visit					
Storekeepers	1	2	3	4	5
Ship's Servicemen	1	2	3	4	5
Mess Management Specialists	1	2	3	4	5
SMTT as follows:					
SMTT Programmed Training	1	2	3	4	5
Fleet Assistance Correction Team (FACT)	1	2	3	4	5
SNAP II Data Base Assistance	1	2	3	4	5
Food Service Management (FSM)	1	2	3	4	5
Retail Operations Management (ROM)	1	2	3	4	5
3M Assistance Visit	1	2	3	4	5

5. Any remarks with regards to the above questionnaire (attach extra sheets if desired):

SECTION II: For the SUPPO:

1. General Questions:

   a. Have you ever received assistance from:

SMA Supply Assistance Visit		
Storekeepers	YES	NO
Ship's Servicemen	YES	NO
Mess Management Specialists	YES	NO
SMTT as follows:		
SMTT Programmed Training	YES	NO
Fleet Assistance Correction Team (FACT)	YES	NO
SNAP II Data Base Assistance	YES	NO
Food Service Management (FSM)	YES	NO
Retail Operations Management (ROM)	YES	NO
3M Assistance Visit	YES	NO

   b. What motivated your request for assistance?

c. Please rate the quality of training you received on each item you responded with "yes" above according to the following scale:

1 - poor
3 - average
5 - outstanding

SMA Supply Assistance Visit					
Storekeepers	1	2	3	4	5
Ship's Servicemen	1	2	3	4	5
Mess Management Specialists	1	2	3	4	5
SMTT as follows:					
SMTT Programmed Training	1	2	3	4	5
Fleet Assistance Correction Team (FACT)	1	2	3	4	5
SNAP II Data Base Assistance	1	2	3	4	5
Food Service Management (FSM)	1	2	3	4	5
Retail Operations Management (ROM)	1	2	3	4	5
3M Assistance Visit	1	2	3	4	5

d. How would you rate the depth of training for each of the items below? (Were the Topics covered in sufficient detail?)

SMA Supply Assistance Visit					
Storekeepers	1	2	3	4	5
Ship's Servicemen	1	2	3	4	5
Mess Management Specialists	1	2	3	4	5
SMTT as follows:					
SMTT Programmed Training	1	2	3	4	5
Fleet Assistance Correction Team (FACT)	1	2	3	4	5
SNAP II Data Base Assistance	1	2	3	4	5
Food Service Management (FSM)	1	2	3	4	5
Retail Operations Management (ROM)	1	2	3	4	5
3M Assistance Visit	1	2	3	4	5

e. How would you rate the range/coverage of the training you received from the items below? (Were there additional topics that should be included?)

SMA Supply Assistance Visit					
Storekeepers	1	2	3	4	5
Ship's Servicemen	1	2	3	4	5
Mess Management Specialists	1	2	3	4	5
SMTT as follows:					
SMTT Programmed Training	1	2	3	4	5
Fleet Assistance Correction Team (FACT)	1	2	3	4	5
SNAP II Data Base Assistance	1	2	3	4	5
Food Service Management (FSM)	1	2	3	4	5
Retail Operations Management (ROM)	1	2	3	4	5
3M Assistance Visit	1	2	3	4	5

Remarks:

f. What assistance training program would you want to be more frequent, or expanded in scope?

PROGRAMS	MORE FREQUENT	SCOPE
SMA Supply Assistance Visit		
Storekeepers		
Ship's Servicemen		
Mess Management Specialists		
SMTT as follows:		
SMTT Programmed Training		
Fleet Assistance and Correction Team (FACT)		
SNAP II Data Base Assistance		
Food Service Management (FSM)		
Retail Operations Management (ROM)		
3M Assistance Visit		

g. Please rate the following functional areas improvement as a result of the last SMA/3M/SMTT assistance Training:

0 - don't know
1 - low
3 - average
5 - high

Ship's Functional Areas:						
Storekeepers						
- Accountability	0	1	2	3	4	5
- Sustainability	0	1	2	3	4	5
- Level of knowledge	0	1	2	3	4	5
Ship's Servicemen						
- Accountability	0	1	2	3	4	5
- Crew Support	0	1	2	3	4	5
- Level of knowledge	0	1	2	3	4	5
Food Service						
- Accountability	0	1	2	3	4	5
- Crew Support	0	1	2	3	4	5
- Level of knowledge	0	1	2	3	4	5
3M						
- PMS	0	1	2	3	4	5
- MDS (CSMP, Configuration, etc.)	0	1	2	3	4	5

h. To what extent did the assistance team provide support in correcting problems identified during the visit?

SMA Supply Assistance Visit					
Storekeepers	1	2	3	4	5
Ship's Servicemen	1	2	3	4	5
Mess Management Specialists	1	2	3	4	5
SMTT as follows:					
SMTT Programmed Training	1	2	3	4	5
Fleet Assistance Correction Team (FACT)	1	2	3	4	5
SNAP II Data Base Assistance	1	2	3	4	5
Food Service Management (FSM)	1	2	3	4	5
Retail Operations Management (ROM)	1	2	3	4	5
3M Assistance Visit	1	2	3	4	5

i. Any remarks with regards to the above questionnaire (attach extra sheets if desired):

_____
_____
_____
_____
_____
_____.

2. Cost/Benefit Questions with Regards to SMTT Only

a. Have you realized any resource savings and/or increased costs, which can be **attributed directly to the SMTT program**?

Resource Savings		Increased Costs	
YES	NO	YES	NO

(For example, resource savings include: Lower OPTAR obligation rates, more valid Material Outstanding File, reduced personnel time commitments, increased supply effectiveness, enhanced inventory control of ESP/SRI/OSI/MAMS/RSS, reduced paperwork, savings from training held on board by the SMTT vice sending crew to Navy schools, etc. Increased costs include: Crew manhours dedicated to the SMTT visit, additional administrative workload due to the SMTT, etc.).

b. If you experienced either savings and/or costs, specify the type (e.g., dollars, time, inventory, etc.), please mark appropriate box. Indicate type of time frame (e.g., continuing, one time, occasional, etc.) in the space provided.

Mark Type of Savings/Cost (if others, specify) (yes/no)		Time Frame (continuing, one time, etc.)
Dollars		
Manhours		
Others		

3. What areas of the SMTT itself do you feel could be improved and in what ways? What would the benefits relative to the costs be? For Operation Desert Shield/Storm participants, please include improvements which could have a direct impact during contingency operations.

Area	Suggested Improvements	Benefits/costs
Example: SMTT Visit	Automatically schedule SMTT visits for those ships that need help (i.e., after ROH, as discovered during SMA, etc.).	Refresher training after ROH. All discrepancies are known; correcting them after SMA is easier. No known cost

APPENDIX B

SURVEY OF SUPPLY OFFICERS AT NAVAL POSTGRADUATE SCHOOL

SUPPLY ASSISTANCE CENTER SURVEY

1. General Questions:

   a. Have you ever received assistance from:

SMA Supply Assistance Visit	YES	NO
Storekeepers	YES	NO
Ship's Servicemen	YES	NO
Mess Management Specialists	YES	NO
SMTT as follows:	YES	NO
SMTT Programmed Training	YES	NO
Fleet Assistance Correction Team (FACT)	YES	NO
SNAP II Data Base Assistance	YES	NO
Food Service Management (FSM)	YES	NO
Retail Operations Management (ROM)	YES	NO
3M Assistance Visit	YES	NO

   b. What motivated your request for assistance?

_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____.

c. Please rate the quality of training you received on each item you responded with "yes" above according to the following scale:

1 - poor
3 - average
5 - outstanding

SMA Supply Assistance Visit	1	2	3	4	5
Storekeepers	1	2	3	4	5
Ship's Servicemen	1	2	3	4	5
Mess Management Specialists	1	2	3	4	5
SMTT as follows:	1	2	3	4	5
SMTT Programmed Training	1	2	3	4	5
Fleet Assistance Correction Team (FACT)	1	2	3	4	5
SNAP II Data Base Assistance	1	2	3	4	5
Food Service Management (FSM)	1	2	3	4	5
Retail Operations Management (ROM)	1	2	3	4	5
3M Assistance Visit	1	2	3	4	5

d. How would you rate the depth of training for each of the items below:

SMA Supply Assistance Visit	1	2	3	4	5
Storekeepers	1	2	3	4	5
Ship's Servicemen	1	2	3	4	5
Mess Management Specialists	1	2	3	4	5
SMTT as follows:	1	2	3	4	5
SMTT Programmed Training	1	2	3	4	5
Fleet Assistance Correction Team (FACT)	1	2	3	4	5
SNAP II Data Base Assistance	1	2	3	4	5
Food Service Management (FSM)	1	2	3	4	5
Retail Operations Management (ROM)	1	2	3	4	5
3M Assistance Visit	1	2	3	4	5

e. How would you rate the range/coverage of the training you received from the items below:

SMA Supply Assistance Visit	1	2	3	4	5
Storekeepers	1	2	3	4	5
Ship's Servicemen	1	2	3	4	5
Mess Management Specialists	1	2	3	4	5
SMTT as follows:	1	2	3	4	5
SMTT Programmed Training	1	2	3	4	5
Fleet Assistance Correction Team (FACT)	1	2	3	4	5
SNAP II Data Base Assistance	1	2	3	4	5
Food Service Management (FSM)	1	2	3	4	5
Retail Operations Management (ROM)	1	2	3	4	5
3M Assistance Visit	1	2	3	4	5

f. What assistance training program would you want to be discontinued, continued, expanded:

PROGRAMS	DISCON-TINUE	CON-TINUE	EXPAND
SMA Supply Assistance Visit			
Storekeepers			
Ship's Servicemen			
Mess Management Specialists			
SMTT as follows:			
SMTT Programmed Training			
Fleet Assistance Correction Team (FACT)			
SNAP II Data Base Assistance			
Food Service Management (FSM)			
Retail Operations Management (ROM)			
3M Assistance Visit			

g. Any remarks with regards to the above questionnaire (attach extra sheets if desired):

_____
_____
_____
_____
_____
_____
_____
_____.

2. COST/BENEFIT QUESTIONS WITH REGARDS TO SMTT ONLY

a. Was your current SUPPO on board during the last SMTT?

b. Have you realized any resource savings and/or increased costs, which can be attributed directly to the SMTT program?

RESOURCE SAVINGS INCREASED COSTS

Yes_____ No_____ Yes_____ No_____

(For example, resource savings include: Lower OPTAR obligation rates, More valid Material Outstanding File, Reduced personnel time commitments, Increased supply effectiveness, Enhanced inventory control of ESP/SRI/OSI/MAMS/RSS, Reduced paperwork, Savings from training held on board by the SMTT vice sending crew to Navy schools, etc. Increased costs include: Crew manhours dedicated to the SMTT visit, Additional administrative workload due to the SMTT, etc.)

c. If you experienced either savings and/or costs, specify the type (e.g., dollars, time, inventory, etc.), approximate amounts of savings and/or costs, the department affected (Combat Systems, Engineering, Ship-wide, etc.), and time frame (e.g., continuing, one time, occasional, etc.) that you are able to identify.

SAVINGS

Type	**Amount**	**Department**	**Time frame**

COSTS

Type	**Amount**	**Department**	**Time frame**

d. Did you realize any significant improvement or degradation to supply services that resulted from the SMTT visit(s)? If so, in what areas (e.g., better overall management, improved stock control, improved configuration control, and improved supply effectiveness, etc.)?

IMPROVEMENT	___ Yes	___ No	DEGRADATION	___ Yes	___ No
AREA:			AREA:		

3. OPERATION DESERT SHIELD/STORM

a. Did your ship participate in either Operation?

b. If you participated in either Operation, do you feel your readiness benefitted due to your last SMTT before the Operation? Why?

4. What areas of the SMTT itself do you feel could be improved and in what ways? What would the benefits relative to the costs be? *For Operation Desert Shield/Storm* participants, please include improvements which could have a direct impact during contingencies.

AREA	SUGGESTED IMPROVEMENT	BENEFITS/COSTS
Example: SMTT visit	Automatically schedule SMTT visits for those ships that need help (i.e., after ROH, as discovered during SMA, etc.).	Refresher training after ROH. All discrepancies are known; correcting them after SMA is easier. No known costs.

APPENDIX C

ACRONYMS

ACOS	Assistant Chief of Staff
ADP	Automated Data Processing
BUPERS	Bureau of Personnel
CDM	Configuration Data Manager
CINCPACFLT	Commander in Chief, U.S. Pacific Fleet
CNET	Chief of Naval Education and Training
CNO	Chief of Naval Operations
COMCRUDESGRU	Commander, Cruiser Destroyer Group
COMNAVSURFLANT	Commander, Naval Surface Force, U.S. Atlantic Fleet
COMNAVSURFPAC	Commander, Naval Surface Force, U.S. Pacific Fleet
COMSUBLANT	Commander, Submarine Force, U.S. Atlantic Fleet
COSAL	Consolidated Shipboard Allowance List
DLR	Depot Level Repairable
DRMO	Defense Reutilization Maintenance Office
EASTPAC	Eastern Pacific
ESP	Excess Spare Parts
FACT	Fleet Assistance Correction Team
FSM	Food Service Management
FY	Fiscal Year
ILO	Integrated Logistics Overhaul

ISMS	Integrated Shipboard Maintenance Support
LOGMARS	Logistics Application of Automatic Marking and Reading Symbols
MAM	Maintenance Assistance Module
MDS	Maintenance Data Systems
3-M	Material Maintenance Management System
MOF	Material Outstanding File
MOV	Material Obligation Validation
MS	Mess Management Specialist
MTT	Mobile Training Team
NAVFSSO	Navy Food Service Systems Office
NAVMASSO	Navy Maintenance and Supply Systems Office
NAVRESSO	Navy Resale and Services Support Office
NAVSEA	Naval Sea Systems Command
NAVSUP	Naval Supply Systems Command
NAVSURFPAC	Naval Surface Force, U.S. Pacific Fleet
NC	Not Carried
NIS	Not in Stock
NPS	Naval Postgraduate School
OPTAR	Operating Target
OSI	Operating Space Items
PCO	Prospective Commanding Officer
PI	Product Improvement
PPI	Planned Product Improvement
P^3I	Preplanned Product Improvement

PXO	Prospective Executive Officer
ROM	Retail Operations Management
RPPO	Repair Parts Petty Officer
RSS	Ready Service Spares
SAC	Supply Assistance Center
SCILSIS	Ship Configuration and Logistic Support Information System
SERT	Senior Enlisted Refresher Training
SERVMART	Service Market
SFM	Supply Financial Management
SH	Ship's Serviceman
SK	Storekeeper
SMA	Supply Management Assessment
SMI	Supply Management Inspection
SMTT	Supply Maintenance Training Team
SNAP	Shipboard Non-Tactical Automated Data Processing
SORT	Supply Officer Refresher Training
SPCC	Ship's Parts Control Center
SSC	Service School Command
SUPPO	Supply Officer
SWOSCOLCOM	Surface Warfare Officer School Command
TAD	Temporary Assigned Duty
TQL	Total Quality Leadership
TQM	Total Quality Management
UIC	Unit Identification Code

LIST OF REFERENCES

1. Memorandum to All Flag Officers from Chief of Naval Operations, Ser 00/OU50214, 13 August 1990.

2. Memorandum for Commander, Naval Surface Force, U.S. Pacific Fleet (COMNAVSURFPAC), from Commander, Cruiser Destroyer Group ONE, 5 June 1987.

3. Nostrant, Craig H., *A Cost Benefit Analysis of the Supply Management Program*, Master's Thesis, Naval Postgraduate School, June 1989.

4. COMNAVSURFPAC, letter 5040 Ser 7/3152, 12 March 1987.

5. Department of the Navy, Commander, Naval Supply Systems Command, Publication P-485.

6. COMNAVSURFPAC, message 110130Z SEP 86.

7. Interview with LT Steve Smith, Senior Officer, Supply Maintenance Training Teams, COMNAVSURFPAC, Code 714B, Naval Amphibious Base, Coronado CA 92155-5035, 24 May, and 26-27, 30 August 1991.

8. *Acquisition Strategy Guide*, 1st Edition, Defense Systems Management College, Fort Belvoir, VA, July 1984.

9. COMNAVSURFPAC Instruction 4400.1f, *Force Supply Manual*, 28 March 1988.

10. Easton, M.E., CDR, USN, *SURFPAC Supply Maintenance Training Team*, COMNAVSURFPAC Point Paper, Initial Draft, June 91.

11. COMNAVSURFPAC, Internal Review, 2 May 1991.

12. Larry W. Johnston. *The TQM Coordinator as a Change Agent in Implementing TQM*, Master Thesis, Naval Postgraduate School, June 1989.

13. Memorandum to all Flag Officers from Chief of Naval Operations, Ser 00/ou50214, 13 August 1990.

14. Interview with CDR James R. Garban, Head, Supply Management Assessment, 3-M, Supply Maintenance Training Teams COMNAVSURFPAC, Code 714, Naval Amphibious Base, Coronado, CA 92155-5035, 3 October 1991.

15. Hodsoll, Frank, Executive Director, Office of Management and Budget, Quality Improvement Prototype, Norfolk Naval Shipyard, "The President's Quality and Productivity Improvement Program," Office of Management and Budget, March 1989.

16. Interview with CDR David Sona, Outgoing Head, Supply Management Assessment, 3-M, Supply Maintenance Training Teams, COMNAVSURFPAC, Code 714, Naval Amphibious Base, Coronado, CA 92155-5035, 24 May 1991.

17. Interview with Mr. Tom Wilson, Senior Analyst, Supply Maintenance Training Team, COMNAVSURFPAC, Code 714B, Naval Amphibious Base, Coronado, CA 92155-5035, 13 August 1991.

18. Interview with Mr. Oscar Mascarinas, Junior Analyst, Supply Maintenance Training Team, COMNAVSURFPAC, Code 714B, Naval Amphibious Base, Coronado, CA 92155-5035, 13 August 1991.

19. Interview with SKCS De la Cruz, Supply Maintenance Training Team, COMNAVSURFPAC, Code 714B, Naval Amphibious Base, Coronado, CA 92155-5035, 27 August 1991.

20. Interview with MMCS Tyrell, Supply Maintenance Training Team, COMNAVSURFPAC, Code 714B, Naval Amphibious Base, Coronado, CA 92155-5035, 27 August 1991.

21. Interview with Mr. Cris Arreola, Senior Analyst, Supply Maintenance Training Team, COMNAVSURFPAC, Code 714B, Naval Amphibious Base, Coronado, CA 92155-5035, 29 August 1991.

22. Interview with Mr. Tom Tomas, Senior Analyst, Supply Maintenance Training Team, COMNAVSURFPAC, Code 714B, Naval Amphibious Base, Coronado, CA 92155-5035, 29 August 1991.

23. Department of the Navy, COMNAVSURFPAC, *Food Service Management General Mess Afloat Training Guide*, San Diego, CA, 1991.

24. Department of the Navy, COMNAVSURFPAC, *Resale Operations Management Ship's Store Afloat Training Guide*, San Diego, CA, 31 March 1991.

25. Department of the Navy, Naval Postgraduate School, *Practical Comptrollership*, Monterey, CA, January, 1991.

26. Department of the Navy, Comptroller of the Navy Notice 7041, "Composite Standard Military Rates, Basic Allowance for Quarters Rates, and Permanent Change of Station Expense Rates," effective 1 October 1990, dated December 10, 1990.

27. Interview with Mr. Mark Summers, CACI Inc. SMTT Project Manager, COMNAVSURFPAC, Code 713, Naval Amphibious Base, Coronado, CA 92155-5035, 28 August 1991.

28. COMNAVSURFPAC, "Supply Management Assessment Statistical Analysis Program Report," 23 October 1991.

29. Interview with LT Phil Allison, Senior Officer, Supply Management Assessment Team, COMNAVSURFPAC, Code 714A, Naval Amphibious Base, Coronado, CA 92155-5035, 13 August 1991.

30. COMNAVSURFPAC, "Supply Management Assessment Statistical Analysis Program Report," 23 October 1991.

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